VOLUME XVIII NUMBER 4

THE ELEMENTARY SCHOOL JOURNAL

CONTINUING "THE ELEMENTARY SCHOOL TEACHER"

DECEMBER 1917

EDUCATIONAL NEWS AND EDITORIAL COMMENT

Committee of the Department of Superintendence

At the meeting of the Department of Superintendence in Kansas City provision was made for a committee on publicity. It is the duty of this committee to take whatever steps are possible to bring to the attention of communities the best types of organization which can be found in American schools.

The committee is making an effort to collect, with the co-operation of school superintendents and others, rules adopted by boards of education, school charters, and state school laws which deserve general recognition as examples to be followed. The committee also aims to find out about school budget systems that are in operation and any other forms of school administration that ought to be imitated. When material of this sort comes to hand the committee will see that it is put into the form of news items and distributed.

It is hoped that in this way wide publicity may be secured for matters of school administration. To this end the co-operation is sought of the leading newspapers of the country. Very frequently a superintendent can secure the co-operation of his local newspaper in printing news items of the type described above. Sometimes the best form of co-operation with the committee will be a statement of the need for publicity of this type in a given community, even where there is no possibility of a preliminary arrangement

with the local paper for the publication of such news items. The committee will send items in such cases and aim to secure their publication.

In order to make possible the collection and distribution of material of this sort the committee has divided the country into sections and has allotted certain states to each member of the committee. So far as possible superintendents are requested to correspond with the members of the committee in accordance with the schedule of states given below:

MEMBERS OF THE COMMITTEE AND ASSIGNMENTS OF STATES FOR WHICH EACH MEMBER IS RESPONSIBLE

J. H. Phillips,
Birmingham, Alabama
Alabama
Florida
Georgia
Louisiana
Mississippi
Tennessee

J. H. Francis,
Columbus, Ohio
Kentucky
Ohio
Pennsylvania
West Virginia

Edith K. O. Clark,
Cheyenne, Wyoming
Colorado
Nebraska
Utah
Wyoming

C. Potter,
Milwaukee, Wisconsin
Illinois
Indiana
Michigan
Wisconsin

C. Hartwell,
St. Paul, Minnesota
Iowa
Minnesota
Montana
North Dakota
South Dakota

C. M. Plummer,
North Portland, Oregon
Idaho
Oregon
Washington

Charles C. Hughes,
Sacramento, California
Arizona
California
Nevada

E. A. Winship,
Boston, Massachusetts
New England
New York

I. I. Cammack,
Kansas City, Missouri
Arkansas
Kansas
Missouri
Oklahoma

Charles H. Judd,
Chicago, Illinois
Delaware
Maryland
New Jersey
New Mexico
North Carolina
South Carolina
Texas
Virginia

National Education Association Meetings

The National Education Association announces that the place of the next summer meeting will be Pittsburgh, Pa. The place of meeting of the Department of Superintendence has been changed. Atlanta found that it would be impossible to entertain the department because of the crowded conditions of the city due to the establishment of a military camp near by. It was at first reported that this meeting would go to Boston; but when the committee began to make arrangements it was found that a number of other conventions were to be held at Boston at the date set for the meeting of the department, and it seemed advisable to consider more deliberately either a change in the date of the meeting or a change in the place. As the *Journal* goes to press the matter has not been finally settled, but the announcement will be ready very shortly.

It has been customary for the *Journal* to make an announcement in this issue of the dinner of Chicago alumni and former students which is annually held in connection with the meeting of the Department of Superintendence. The announcement is made in a preliminary way at this time and will be given more fully in a later issue.

Child Labor Day

The National Child Labor Committee has usually designated the fourth Sunday in January for observance as Child Labor Day in churches and the following Monday for observance in the schools. It is especially urged this year that all who are interested in the welfare of children promote the observance of this day and the distribution of information with regard to the work of the committee and the needs of promoting this work.

The war has made a heavy draft upon high schools and has created the temptation for the withdrawal from elementary schools of all children as soon as they reach the age for entrance upon industries. The Federal Child Labor Law has been vigorously attacked in many quarters, and one judge has granted an injunction against its operations in North Carolina. It is of the greatest importance, therefore, that the people of the country should be made intelligent on the issues that are involved between education and child labor.

The experience of England and France has been commented on a number of times in this *Journal*. Their attitude early in the war was that schools might be allowed, without serious injury to the community, to suffer somewhat in response to military demands. But a steady tendency has shown itself in recent years in those countries to enlarge education rather than curtail it. In England the program for school legislation presented to parliament by Mr. Fisher, the minister of education, is one of the most comprehensive that has ever been laid before an English parliament. There can be no doubt at all that England will adopt this program, thereby adding very greatly to the opportunities of children in Great Britain for a more complete and extended education.

In this country public expenditures are sure to be scrutinized very carefully during the coming years. School activities will be questioned and the demands of labor will be vigorously set forth. Whatever can be done to concentrate the thinking of communities on the importance of education and the necessity of wise legislation with regard to child labor should be done.

The National Child Labor Committee, 105 East 22d Street, New York City, will issue to anyone who is interested a series of pamphlets bearing on the problem of child labor. This committee is also prepared to co-operate with anyone who wishes help in preparing programs for child-labor meetings.

Health in the Army and in Schools

The examinations which have been made of men drafted for the Army give more information than has ever been at hand in the United States before with regard to the physical condition of the men of the country. The bearing of the facts found on school programs and the general character of the facts themselves are clearly set forth in an article published in the *New York Times* reporting an interview with Dr. J. A. Nydegger, who is in charge of the United States Public Health Service in Baltimore.

Some extracts from that article are as follows:

> While physicians who had made extensive studies of the condition of health and physique of the youth of the country expected the percentage of

rejections to be high, few believed that conditions would be as bad as they were shown to be by the medical examinations of drafted men. The showing made by this medical survey will have great moral value in awakening the country to the need for better medical and sanitary care for children in schools, especially in rural schools, Dr. Nydegger said. He added that the United States was behind most European countries in provisions for the health of school children. In Europe the need for strong and healthy men for armies has turned the attention of governments to the health of school children. England was aroused, Dr. Nydegger said, when the medical examination of recruits during the Boer War showed that many were unhealthy and defective and that their troubles in a vast number of cases could be traced to bad physical surroundings and methods in English schools.

"As soon as the Boer War was over," Dr. Nydegger said, "the British government proceeded to introduce throughout the United Kingdom a well-devised medical inspection of schools, compulsory athletics, and mild military training to correct, as far as human endeavor was able, the physical defectives. Other European countries arrived at the realization of this defect in their school systems at an even earlier date, and provided systems of athletic training and medical inspection in their schools, beginning with kindergartens.

"While in this country most of the city schools have adopted medical inspection, most of the rural institutions have none. In this lies the fact that the unsanitary conditions in these places produce 75 per cent of the physical defects which are today barring men from the United States forces. Defective eyes, ears, teeth, and throats among the youth of rural communities have been found to be due largely to conditions in the rural schools. Improper desks and seats also have caused much spinal curvature, leading to other faulty conditions. These conditions ought to be corrected at once, and school children all over the country should be examined because defects arising at their period of life as a rule cannot be overcome later.

"The introduction of a single innovation or procedure is not going to correct all of the physical defects existing in our young men. It must be a gradual process, beginning with an efficient universal medical inspection in our public schools at the age of six years, coupled with a well-devised system of physical training and mild military exercises to harden young men for the more strenuous universal military training which is to follow after school days are over.

"This is a great national problem, and the federal government should handle it, or at least co-operate with the states to the extent of seeing that defects are corrected, with the view of remedying conditions, if not for the present generation of young men, for the generations of the future."

Public-Health Charts

Education in personal hygiene by means which respond in every way to the needs of this ideographic age is offered in the new series of health charts just issued from the American Museum of Natural History, New York City, as originally prepared under the direction of Dr. C. E. A. Winslow, curator of its Department of Public Health.

These charts are especially adaptable for schools where it may not be possible or desirable to use educational films, and may be easily transported.

The Departments of Public Health and Public Education of the Museum five years ago prepared three series of public-health charts for the use of the schools of New York City. Each consisted of a folio of wall charts illustrated from original photographs and devoted to the following subjects: "The Spread and Prevention of Communicable Disease," "Insects as Carriers of Disease," and "Bacteria and Their Work in the World."

The demand for these in the schools was many times greater than the supply, and doubtless many teachers were discouraged in their efforts to obtain them. As a step toward meeting this demand the Museum has just issued a new edition of the set entitled, "The Spread and Prevention of Communicable Disease," in sufficient number, the institution hopes, to supply all the schools of the city.

On each is a large engraving delineating by scenes from life the mistakes of diet and bodily care which lead to human ills.

The charts are 22×28 inches each and each set consists of 15 charts on heavy paper, bound at top and bottom with tin, and suited in every way for hanging on the wall. Although each chart is clearly labeled the sets are accompanied by a booklet containing information which may be of service to teachers in talks on that important subject of physical well-being.

The delivery and collection of the charts are being attended to by the Museum. As with the circulating collections of natural-history specimens, the loan period is three weeks.

Owing to the numerous requests from educational institutions outside of the city, arrangements have been made to offer a limited number of sets for the nominal price of $6.00 each, express charges extra.

Educators who desire further information regarding the new edition may obtain it by addressing George H. Sherwood, curator, Department of Public Education, American Museum of Natural History, New York City.

Night Schools

From every part of the country come announcements of night schools which are more largely attended than ever before. In the same notes come statements of expanded opportunities and appeals to that part of our population which has come from foreign lands to take on the ways of American life.

Two typical reports may be quoted as showing the general character of all. To quote from the first:

> There are nearly 1,300 pupils in the Duluth night schools. This is nearly three times the number enrolled last year, when night schools really worthy the name started. The increase is largely the result of close co-operation between Superintendent Hoke and the employers of labor.
>
> The value of these schools has been gotten to the foreign element, and to the working men in general. They have found there is something for them that is worth while.
>
> They have found they can get what they want and that it is practical. They have found sympathy and understanding of their problems. It is a getting together on a mutual basis.
>
> To so organize these schools as to meet practical requirements, to make them in fact schools with vocational adjuncts, is a huge task. It is not a duplicating of the day schools, but a totally new system adapted to a very different purpose.
>
> Every feature from textbooks to teaching force has to be organized to fit the new situation and new demands. Textbooks of first to fourth grades are a total misfit in teaching English to the foreigners. The best primary teacher for children may be a total failure with these adults. So the best teachers for children in other branches may be wholly inadequate to interest and get results with grown-ups.
>
> The attendance, however, proves that these difficulties are being met and solved, while the benefits go beyond the schools themselves, as it is recognized by all educators and social workers that the only permanent and successful basis for social centers is the night school.
>
> The elders get the school habit. They get used to going to school buildings. Gradually they take their families and there you are—genuine social centers where the schools are for the elders and children, with something for them all.

The second report states:

Night schools in the District of Columbia opened their doors last night to a record attendance.

It is estimated that the class in shorthand and typewriting at Business High School has achieved the record enrollment of 350.

Classes in shopwork, cooking, and millinery at McKinley Manual Training School are so large that additional classes will be formed in order to accommodate the applicants.

More than seventy-five pupils have enrolled in the arithmetic and bookkeeping class at Business High School. The attendance figures in the other classes at Business follow:

100 in English; 50 in French and Spanish, and 25 in law and salesmanship.

The registration in the colored night schools was exceptionally heavy, according to the assistant superintendent of colored schools. Although no figures are available it is expected that additional classes will have to be formed in many of the colored schools.

A Civil-Service Call

The United States Civil Service Commission makes a special request of educational journals that they publish the following announcement:

The Commission requests, on behalf of the American people, that you publish in your journal as frequently as you can, as an item of news, a notice of the war need of the government for stenographers and typewriters. The difficulty in securing a sufficient number of stenographers and typewriters for the unusual demands of the government is giving the Commission great concern.

The publication of this call ought to be accompanied by a equally vigorous statement to the effect that the schools of this country are in need of teachers. In some quarters the need has become so serious that school committees have been obliged to appeal to state authorities, and wholly untrained teachers have been appointed or the schools have been closed.

The fact is that human resources are being taxed to the limit in this country. Labor of every type has never been so much in demand. This goes to show that the war is a national undertaking and is drawing into its operations every person and every item of capital in the nation. The Civil Service Commission is giving expression in its field of operation to a need which educational people should take up and keep clearly before the country.

The New York Election and the Schools

As this *Journal* goes to press, it appears that the election in New York will have a marked effect upon the educational policy in that city, particularly with reference to the extension of the so-called "Gary plan." Whether it is correct to interpret the result of the election as in part a protest against this plan, or whether the agitation against it was purely a political affair, the new administration, which will have the appointment of the new board of education of seven members, will undoubtedly see to it that the experiment is discontinued, or at least greatly restricted. This matter is presented in the following quotation from the *New York Globe:*

> Mayor-elect Hylan will name the first small board of education in New York City. It is certain that not a single one of the present majority members of the board of education will be continued in office after the first of the year. It is equally certain that the new board will be drawn from among those who contributed most to the progressive administration of the board of education that preceded it. It will be some weeks before the list of members is announced, but the seven members are pretty well known by this time.
>
> The new board of education will be in complete control of the public schools for seven years. The term of office of the members now named will be from one to seven years each, and their successors will be appointed for the full seven-year term.
>
> It will have large and unusual powers and will have to fill many of the most important positions in the school system during its term of office.
>
> It is settled now that the Gary plan will not be extended; that Superintendent Wirt, of Gary, Ind., will no longer be employed in this city; that the experiment with the Gary plan will be continued in a few of the schools, and that a fixed programme of school administration will not be imposed upon the school system.
>
> The board of superintendents has taken up the question whether or not the programme for extending the Gary plan to the fifty schools for which the funds were last authorized should be carried out. It was voted to reject the plan for twelve Brooklyn schools.
>
> The superintendents deemed the proposed changes unnecessary and itemized their objections to show that no duplication was needed in the organization of the twelve schools specified.
>
> The appropriations for the twelve schools, which will be rescinded if the recommendations of the superintendents are approved, amount to nearly $170,000.

We have here another of the too-frequent examples of the mixture of politics and education. It is probable, however, that there

is another lesson to be drawn from this incident than merely that the school should be divorced from politics. In a democratic community in which the control of the school system rests ultimately with the people, it is necessary, not only that wise policies shall be carried out in the school, but also that the people shall be convinced of the wisdom of the school administration. It seems probable that the rather strenuous opposition which appeared to exist in some quarters to the Gary plan could not have been a purely artificial piece of agitation during the election. The people apparently were not sufficiently intelligent upon the issues, at any rate, to prevent their being easily confused with reference to them by one of the candidates for mayor. This in spite of the fact that to an onlooker the arguments which are used against the experiment appear to be of a very insufficient character.

A Modified Gary System in Philadelphia

In spite of the reaction which is taking place in New York, the movement for the more economical use of the school building and for the enrichment of the curriculum which accompanies it appears to be gaining headway elsewhere, as is indicated by the following clipping from the *Philadelphia Ledger:*

> Philadelphians who may fear a strike similar to the one in New York at the Steele School, Sixteenth and Cayuga streets, where the Gary plan is said to have been introduced, have no cause to fear such a result. Those who have followed the situation in New York realize that the uprising is not so much against the system as against certain political issues.
>
> The Gary plan, as now being worked out at the Steele School, has been so modified as to be nearly unrecognizable by one who knows it, and yet it is more than probable that eventually this district will develop a plan which will rival the Gary plan in its adaptability to the needs of a growing school population.
>
> Virtually the only Gary ideas which seem to have been put into use are the plan of keeping the schoolrooms in constant use by the rotation of classes, the installation of an auditorium, which is used by all the classes, and a school library and sewing-room. There is also a revised system of calisthenics, which will include marching, body drills, folk-dances, and games.
>
> The ideals of the principal are to care for the growing school population, to make school work interesting and attractive to teachers and children, and to make the school a center of real educational activities.

The War and the Teaching of History

It is pretty generally recognized that the war is to have an effect upon the subject-matter and methods of teaching, although the specific changes which are to be made are as yet poorly defined. Perhaps the most radical modification is to take place in the teaching of history. The war has made it very clear that it is necessary for the people to apprehend the national purposes, both of our own country and of others. The war has probably done more to educate the American people in recent European history and in the relationships between European nations than has all of the study of history which they have made in the school. At the same time the war has made necessary an attempt by Americans to define clearly their own purposes as citizens of the nation. This thinking has been done, however, under an emergency, and there is a confusion which might have been prevented in some measure by a broader study of history in the school. It is reported that the National Board of History Teachers, at its conference in Washington, has undertaken a study of some of the changes which are to be brought about. The United States Bureau of Education has issued a pamphlet entitled *Opportunities for History Teachers*, which calls attention, in the quotation which follows, to the necessity of broader conceptions of their subject:

> First of all comes the duty of keeping, for teacher and pupil, the habit of at least trying to see things as they really were and are. This is not easy at any time. It is peculiarly difficult at such a time as this, when too many people believe a slight distortion of facts may be a patriotic duty. In the long run loyalty to the country, as well as loyalty to history, are best served by looking facts squarely in the face.
>
> The training of young people and of the parents through the pupils to take an intelligent part in the decision of public questions is important enough at any time, but it is peculiarly so in this war, whose meaning for the individual citizen is not so easily brought home. In 1823 and 1827, when the Monroe Doctrine was under discussion, Daniel Webster referred to the people who thought that Americans had no interest in the European system of mutual insurance for hereditary rulers against popular movements. "What," they said, "have we to do with Europe? The thunder, it may be said, rolls at a distance. The wide Atlantic rolls between us and danger; and, however others may suffer, we shall remain safe." Webster's answer to this question was strikingly similar to some of the utterances of President Wilson, "I think it is a sufficient answer to this to say that we are one of the nations of the earth. . . . . We have as clear an interest in international law as individuals have in the laws of society."

That was said long before the steamship, the submarine, and the wireless had broken down still further our "splendid isolation." Today we are fighting for our own rights, but, over and above those special rights of our own, we are fighting for international law itself, without which no nation can be safe, least of all those democratic governments which are less effectively organized for war than for peace.

No one can take an intelligent part in a great conflict for the safety of democracy under an orderly system of international law unless he is really interested in and knows something about other nations than his own—about the difference between a republican government like our own or that of France or the scarcely less democratic constitution of Great Britain on the one side, and, in sharp contrast to all of these, a strongly monarchial system like that of the German Empire, in which the most important measures affecting the national welfare may be practically determined by a single hereditary sovereign or a small group of such sovereigns.

An editorial in the *Grand Rapids News* indicates that the National State Teachers' Association of Michigan has passed resolutions on the same topic. The quotation from the paper follows:

The teachers resolved that we should tell our young people that the war of the Revolution was not so much a war against England as it was against the German king of England, George III. During those stirring times this scion of the house of Hanover was trying, not only to coerce the English people, but those, mainly of English birth, who had journeyed to the new country across the Atlantic. In the old country, King George was opposed by such eminent men as Pitt, Burke, and Fox, who were fighting for the rights of Englishmen against the foreign oppressor.

England, as history proves, has not been as bad as its kings. The whole long story of Britain has been one of a struggle to escape oppression by its rulers. One by one the people over there wrung from unwilling sovereigns their rights. When we read the past, we marvel why they kept to the king system. In comparatively recent times they chopped off the head of one king and sent another into exile. For a long period Cromwell ruled them. He ruled with a rod of iron, and while he made the name of England respected the world over, he was not as tolerant as democrats should be.

It appears that American teachers were complacent with the traditional spread-eagle interpretation of the Revolutionary War until the alliance with Great Britain in the present war emphasized the community of interest between the two nations. This is but a single example of the general change which a sudden awakening to present-day realities in national and international affairs must have on our treatment in the school of the events which have led up to the present.

STAPLES OF GRAMMAR AND COMPOSITION

ALLEN CROSS
State Teachers College, Greeley, Colorado

My story is of a chastened and transformed prodigal who left home, not because in his youthful bumptiousness he thought he could take the part of his father's goods that would ultimately fall to him and make a big hit in the business world with it, but because he was no longer welcome. He was taking up too much room. The younger members of the family, as they began to grow in stature, were being cramped. A large part of the family's attention was being devoted to the recognition of the decorative features of this elder son—things of little importance in themselves—and he was not contributing anything very useful to the support of the family.

Thus it happened that he was ejected to make room for the growth of the younger sons and daughters. He went without his patrimony, and had even to submit to having a bad name put upon him by those who did not wish him well. For ten years or so he was knocked about from pillar to post, sometimes even denied admission in quarters where he had always been an honored guest before; and when he found a welcome at all, it was to a very humble place below stairs with the scullions.

But the prodigal has come back home. He is stripped of all his pretty but useless adornments. He does not jostle the younger members of the family. He tries his best to serve them, and is gradually coming to be acknowledged as an extremely useful colaborer with the others of the household. No fatted calf was killed to do honor to his return; but it is quite possible that, if he does his work well and observes a fitting sense of proportion, he may be asked up from the humble place where he now takes his meals and be given an inconspicuous stool even at the General Education Board.

Well, grammar is the subject of my story, and the modern teaching of grammar the burden of my song. Two Colorado hunters went out into the wilds of the San Juan Mountains to bag a mountain lion. One very scientifically "made a survey" before he started on the trip and found that there is approximately one-fifth of a lion to the square mile in a certain section of the timber. He had a bell-mouthed cannon constructed, loaded it with slugs, and fired it at random out into the brush in the hope of annihilating the game which statistics declared to be fractionally at large. He produced a thundering lot of noise, but when he searched the shrubbery he found that he hadn't killed the cat.

The other hunter provided himself with a high-power rifle equipped with a Maxim silencer, searched the five square miles, treed the one complete lion, and brought the beast down with a well-aimed shot.

"A foolish figure; but farewell it, for I will use no art."

We've been teaching grammar like my first hunter. We've known that there is big game somewhere in the timber; and we've fired a scattering cannon charge at random to see what we could bring down. I am going to admit so much about the teaching of grammar in the elementary school that I may seem prejudiced against the prodigal unless I make similar admissions for some other common-school subjects. In behalf of the school superintendents, I freely admit that they are directing teachers to fire broadcast, blunderbuss fashion, at spelling, at physiology and hygiene, and to a less extent at history and arithmetic, to mention only the most glaring cases in the school curriculum.

The functional method, the plan of the hunter who provides himself with a high-power rifle, locates his game, and brings it down with a well-directed shot by using a relatively small charge and producing but little noise, is the coming method—the watchword of the next ten transforming years. Doubtless within those years the term "functional" will be used so much and will be so ill used that it will become a by-word and a hissing to many an over-superintended teacher. That's the misfortune of a necessary reform. Recall "apperception," "dynamic factor," "vital statistics," "standardization," and "survey." Nevertheless, the morning glow of the functional method is on the horizon.

What is it? It is finding what is to be done and then proceeding with the greatest economy of means consistent with effectiveness to do the thing—not vaguely and generally, but specifically for individuals. If thirty-two children in the fifth grade already know the table of sevens, and three do not know it, the functional method directs the teacher to find out who are the delinquent three and then teach the sevens to them, concentrating all the effort on the three instead of taking a week and blazing away at the whole thirty-five with ammunition one-tenth of which would serve for the three who are fair game for the gun loaded with sevens.

If you knew the facts about a child who passes for a "terrible" speller, is it not quite possible that he habitually misspells only fifty or sixty common words? Perhaps four pupils in a class of forty give the whole grade the name of "awful" spellers. Each of the four, it is quite possible, has his own set of words overlapping each the other somewhat. Do we not worry the whole forty, and waste days and days of their time because we do not know the facts? Why not set out to learn what words each pupil misspells, make a list of the misspelled words common to the whole group, drill the forty on these, and then make an individual matter of the words that each child claims for his own?

These two examples, the one from arithmetic, the other from spelling, will serve to illustrate what I mean by the *functional*, as opposed to the *general*, method, although it would be no trouble to summon examples from each of the other elementary-school subjects. But now that I have generously admitted the faults of all my neighbors and kindly offered to remove some motes, allow me to turn my attention to certain beams that I am painfully aware of.

We have taught the whole of grammar to all of our pupils as if it were an end in itself. We have adorned the subject with frills that it never possessed. We have allowed it to carry a dead weight of pigeonhole lumber pertinent enough to grammar as the science of language, but wholly useless to grammar as a tool to give a child the use of correct speech, unstinted and direct. We have given it classifications and complexities which may be valuable as mental discipline, but which actually hinder its true function.

As an adult student of the science of language I want to know all there is to know about English grammar. But the only interest a child in the elementary school can have in this subject is his interest in it as it helps him to determine what to say or what to write when in doubt about the customary usage in a sentence he is formulating. That's the function of grammar; and only those facts of grammar really function which actually serve that purpose.

Once admit this, and your problem defines itself. What kinds of errors do pupils actually make? Are there some errors that practically all children in a given community make? (I am already convinced that we must make at least community surveys—that there is no one set of errors common to New Haven, Pittsburgh, Macon, Fort Smith, Leadville, Santa Barbara, and Boise.) What are the speech irregularities of Edith Stone, Eddie Tolliver, Kate Thatcher, and Willie Steinmark?

Until very recently nobody thought of finding out what children actually say. I grant that some older lists were made—but these were made under the lamp. They were either vague recollections of what the compiler had heard or else a list made deductively—a list of errors which might be expected if one should consider the difficulties of English speech and the tendency of human nature to catch the nearest way, the easiest way, the slipshod way.

Then came two honest efforts actually to find out, by observation and notation on the spot, what children actually say. I refer to the Boise list made under the direction of Miss Earheart and Miss Small, and the Kansas City list made by Dean Charters and Miss Miller.

Since the publication of these there has been more or less talk about grammar based on errors. But, excellent as these preliminary surveys have been, I do not believe we are yet ready to make a grammar based on errors. Do we yet know what the errors are? Is there a body of errors, common to all children, large enough to become a foundation upon which to build up a teaching system for grammar? Are the errors that have already been noted the significant ones—the ones which make the difference between coherent speech and chaotic groping for expression?

Young people in my college classes tell me that their previous teachers have been very careful to train them not to use "got," not to use a preposition at the end of a sentence, not to say "try and," not to split the infinitive, and to set off with commas a phrase out of its usual order. Of course, these were not the only errors, or imaginary errors, eradicated; but for some reason teachers have succeeded in making these imaginary faults of speech stand out more prominently than much more serious matters.

The trouble with all the lists that I have yet seen in print is that they regard the errors in the use of form and idiom as the most significant. I think that those errors that becloud the thought are by all odds the more significant ones. A girl who says: "I like a black hat for street, 'cause black don't give no bad contrasts with any color dress I got on," uses pretty crude forms of expression. But what she says is very much clearer than this attempt to say the same thing—an attempt, by the way, which contains no one of the errors listed in the best of the printed lists: "You see, a black hat for street—any color suits—my dress, and stuff. Well, I just think it always pays."

The Boise list of errors has only a dozen items: Principal parts of the verb, disagreement of verb and subject, sequence of tenses, uses of "shall" and "will," "try and" for "try to," double negative, bad pronunciation, case forms of pronouns, pronouns for adjectives, indefinite reference, adjectives for adverbs, and colloquialisms, vulgarisms, provincialisms, and incorrect idioms. These are somewhat subdivided, but I believe I have included them all in this brief summary. From this dozen I would subtract "try and." I do not like the expression, but I believe it is seen about as frequently as "try to" in literary works.

The Kansas City tabulation has twenty-one errors in the oral list and six more in the written. The oral list is substantially the same as the Boise. Two or three items of the Boise list—vulgarisms, provincialisms, incorrect idioms, etc.—are omitted and the others subdivided into twenty-one heads. In addition to these there are the six other kinds of errors that were observed in the writing of the same pupils. Three of these are for punctuation, and the other three for sentence structures.

As an adult student of the science of language I want to know all there is to know about English grammar. But the only interest a child in the elementary school can have in this subject is his interest in it as it helps him to determine what to say or what to write when in doubt about the customary usage in a sentence he is formulating. That's the function of grammar; and only those facts of grammar really function which actually serve that purpose.

Once admit this, and your problem defines itself. What kinds of errors do pupils actually make? Are there some errors that practically all children in a given community make? (I am already convinced that we must make at least community surveys—that there is no one set of errors common to New Haven, Pittsburgh, Macon, Fort Smith, Leadville, Santa Barbara, and Boise.) What are the speech irregularities of Edith Stone, Eddie Tolliver, Kate Thatcher, and Willie Steinmark?

Until very recently nobody thought of finding out what children actually say. I grant that some older lists were made—but these were made under the lamp. They were either vague recollections of what the compiler had heard or else a list made deductively—a list of errors which might be expected if one should consider the difficulties of English speech and the tendency of human nature to catch the nearest way, the easiest way, the slipshod way.

Then came two honest efforts actually to find out, by observation and notation on the spot, what children actually say. I refer to the Boise list made under the direction of Miss Earheart and Miss Small, and the Kansas City list made by Dean Charters and Miss Miller.

Since the publication of these there has been more or less talk about grammar based on errors. But, excellent as these preliminary surveys have been, I do not believe we are yet ready to make a grammar based on errors. Do we yet know what the errors are? Is there a body of errors, common to all children, large enough to become a foundation upon which to build up a teaching system for grammar? Are the errors that have already been noted the significant ones—the ones which make the difference between coherent speech and chaotic groping for expression?

Young people in my college classes tell me that their previous teachers have been very careful to train them not to use "got," not to use a preposition at the end of a sentence, not to say "try and," not to split the infinitive, and to set off with commas a phrase out of its usual order. Of course, these were not the only errors, or imaginary errors, eradicated; but for some reason teachers have succeeded in making these imaginary faults of speech stand out more prominently than much more serious matters.

The trouble with all the lists that I have yet seen in print is that they regard the errors in the use of form and idiom as the most significant. I think that those errors that becloud the thought are by all odds the more significant ones. A girl who says: "I like a black hat for street, 'cause black don't give no bad contrasts with any color dress I got on," uses pretty crude forms of expression. But what she says is very much clearer than this attempt to say the same thing—an attempt, by the way, which contains no one of the errors listed in the best of the printed lists: "You see, a black hat for street—any color suits—my dress, and stuff. Well, I just think it always pays."

The Boise list of errors has only a dozen items: Principal parts of the verb, disagreement of verb and subject, sequence of tenses, uses of "shall" and "will," "try and" for "try to," double negative, bad pronunciation, case forms of pronouns, pronouns for adjectives, indefinite reference, adjectives for adverbs, and colloquialisms, vulgarisms, provincialisms, and incorrect idioms. These are somewhat subdivided, but I believe I have included them all in this brief summary. From this dozen I would subtract "try and." I do not like the expression, but I believe it is seen about as frequently as "try to" in literary works.

The Kansas City tabulation has twenty-one errors in the oral list and six more in the written. The oral list is substantially the same as the Boise. Two or three items of the Boise list—vulgarisms, provincialisms, incorrect idioms, etc.—are omitted and the others subdivided into twenty-one heads. In addition to these there are the six other kinds of errors that were observed in the writing of the same pupils. Three of these are for punctuation, and the other three for sentence structures.

The extension of these Kansas City observations made by Miss Betz and Miss Marshall finds no new material, I believe. Their contribution consists in a logical organization of the kinds of errors so as to make the list the foundation for teaching a grammar based on errors.

All of this is very valuable work. It is a kind of pioneering that must be done by somebody before the full fruits of a new and big idea can be matured. But it does not go the whole length. Tucked away in Dean Charters' list is a series of observations that at first glance seem insignificant, but which upon closer examination seem to me, at least, to be by far the most important items in the whole twenty-seven. These items are:

22. Failure to put a period at the end of a statement:
    Total number of times 3,600
25. Omission of subject:
    Total number of times 313
26. Omission of predicate:
    Total number of times 297
27. Confusion of dependent and independent clauses:
    Total number of times 1,095

If item 22 is just children's carelessness about periods, it is not at all serious. But if it occurs in a construction like this: "Fred's cousin came on the six o'clock train, this was a great surprise to him," it is an indication of failure to recognize a logically complete sentence.

Items 25 and 26 may indicate carelessness, or an entire lack of feeling for the necessity of having a clearly understood or expressed subject and predicate as the groundwork for any sentence.

Item 27 almost surely means both lack of "sentence-sense" and the prevalence of that deadly monotonous "run-on" arrangement of simple sentences that makes a speaker's statements one just as good as the other from morning till night, without shading and without the subordinations and co-ordinations that make speech interesting, varied, and exactly expressive.

It is just here that the functional method parts company with grammar based on errors. If in a sixth grade there were nothing more to do than to correct twenty-seven faulty constructions, then

teaching would be paradise enow. All one would have to do would be to catalogue the six or seven errors that practically all the pupils in the grade make in common and then determine what each pupil's individual list is. Having distributed the twenty-seven thus, you would proceed to substitute new habits for old—eight or ten for each pupil.

These two methods travel the same road, and they work in the same way for a time. There must be in any method of teaching grammar a certain amount, by no means insignificant, of corrective instruction. But there must be also a great deal of constructive teaching. The first method seeks to discover what the children's errors are in the use of the forms of the parts of speech, and to substitute correct forms in the place of incorrect ones. This is very laudable so far as it goes.

The functional method goes to this length with grammar based on errors. There they part company. Keeping always in touch with its declaration of purpose—it is the business of grammar to give a child the means to guide himself in his speech and writing—the functional method makes more of those matters that reflect thinking, such as correct sentence structure, methods of subordination, and the substitution of clearness and force for hazy and confused and indirect thinking.

Grammar based on errors catalogues the formal errors and tries to eradicate them. Functional grammar does the same. And then it goes on to direct the child in the methods at his command to construct sentences, to throw up one part of a thought into a position of first importance and to submerge other phases of the thought, each into its relative subordinate position, and to manipulate language. Both are intelligently corrective. The latter is corrective and constructive—first teaching a child to think clearly and then supplying the deficiencies apparent in his machinery of expression.

Thus the staples of grammar and composition are seen to depend very greatly upon the method to be followed. If our grammar is to be merely corrective, we should need to regard only those phases of grammar which serve to correct common errors, or those which are presupposed by the rules which we use in generalizing our

corrective admonitions. A child says, "The teacher asked I and Alice." Politeness, not grammar, requires a change of order. The transitive verb in the active voice requires an object. "Me" is the object form of the first personal pronoun. Now we have made it necessary to teach personal pronouns, the case forms, and the transitive verb and its object. In a similar way we should discover an extended list of staples of grammar, the need for which would become apparent as soon as we begin to take stock of the errors to be corrected and the means at our command to make the corrections and to show the reasons for the changes.

In addition to this the functional method will require constructive composition, both oral and written. The subjects for the composition will be whatever topics call up for the child an unforced interest or possibly even a spontaneous enthusiasm. While reading his composition or speaking upon his enthusiasms the pupil would need to be watched and directed so as to be helped in making his thought clear and in arranging his ideas with due regard to proportion. The teacher would soon find that in these matters of sentence arrangement, use of idioms, means of subordination, and so on, his task would not be formless and beyond the possibility of an ordered arrangement. Just as he is able to catalogue the formal errors in the use of the parts of speech, he would find himself listing the constructive, essential things to be done for his pupils in these matters of thought-production which seem to me to be the significant matters in the teaching of grammar.

For the teacher in the early grades before written composition begins, the problem will be merely directive and corrective. She will be employed in getting her children to think and to express their thoughts correctly and clearly. She will not expect the subordinate clause, nor will she try to teach its use. She will remember that children think straight, simple thoughts, and she will be content if these are spoken correctly. If she is alive and interested, she will know what errors are common to all her flock and what each child's personal list is.

At first thought you might assume that there would be no staples of grammar and composition for the fourth grade if the third-grade teacher had done her duty. There will be, however, with the increas-

ing complexity of the child's ideas a complexity which increases with the years. New matters come up. These must be listed and taken care of. "Sufficient unto the day is the evil thereof." The teacher in any grade must follow a program which is in the main like that for any other grade—listing the speech faults of each pupil and then systematically proceeding to eradicate them by substituting correct habits. Since the problem is in detail different from grade to grade, it would seem that expert teachers are going to be required in every grade and that no textbooks could be devised which could by any possibility be of any assistance to the teacher. I do not think so. I am convinced that for many years to come, perhaps forever, the majority of our teachers will need to be directed by textbooks.

It is not easy to predict what the textbooks for the lower grades will be, but I am convinced that they will have to abandon the ideas of completeness and logical arrangement. They must meet the need as it exists, not as someone thinks it is or ought to be. These actual conditions must be determined by examination—not general surveys, but specific observations, local and individual. The pattern for these examinations must be set by experts. I am convinced of this by the kinds of corrections I constantly hear grade teachers making. Most of them have a few pet aversions. These they very much overemphasize to the neglect of others vastly more important.

Even we who pose as specialists in English and in educational theory have not done much better. We have thus far merely observed errors of the same general nature, and extended the list to about thirty. We see what we look for. We can't see errors that we still use ourselves in writing and speaking. If we use "like" as a conjunction, we do not recognize it when we see or hear it. If we use the awkward "as" clause as a means of causal subordination, it does not shock us into consciousness when a pupil uses it. When we start out to observe what our pupils say or write, we are disposed to take a ready-made list and check against it.

While the new textbooks must be made for the pupils' daily needs, they must also be a guide to the teacher. They must show her how to take verbatim all that a child says for a given length of

time, using a kind of shorthand that is accurately representative of what the child says. They must show her how to read this and the spontaneous written work of the child; how to recognize all the errors; and how to conduct the campaign against the errors—both formal and essential—and to substitute new and better habits for the old.

And now the conclusion. I have said that the textbooks for the language lessons in the lower grades could not be a complete and logical arrangement of the facts of English grammar. Such an arrangement is for the maturer student, for reference like a dictionary. The elementary books should help the teacher in her task of erasing the bad-language habit and writing in the good. The logical order for those lessons will be whatever order the errors occur in—a matter not yet determined. Perhaps every pupil in this irregular method of procedure will cover all the facts of grammar in the first six years. But I believe there should be a time in the seventh or eighth grade or both when the facts of the parts of speech and of sentence structure should be systematically arranged and taught so as to familiarize the pupil with all the workable mechanics of his mother-tongue before he leaves school.

But even then there is no place for grammar facts that do not function. I would teach only those parts that are likely to be useful for present and later reference. Classifications, no matter how true or how interesting to adult students of language, should be omitted unless they function as guides to speech and writing for the young person. For example, I would teach the capitalization of proper names without teaching common and proper nouns. I would teach the possessives of nouns as spelling, and omit case altogether. I would say nothing of the gender of nouns except in the few cases where nouns are distinctly masculine or feminine. I would have little to say about the mode of verbs. These citations will serve to show the manner of pruning which the grammar of the parts of speech would be obliged to undergo. There would be but little of the imaginary inflections left, but that part would be useful.

Now I should have ample drill in building type-sentences, and in the practice of their use for specific expression. There should be a simple form of sentence analysis, even that shorthand form of

written analysis commonly called diagrams. This analysis should recognize: the subject, the predicate, the predicate complement, and the modifiers of the three—modifiers in the form of words, phrases, and clauses. That is a simple program, but it is all except the drill. Everything should be kept simple and reasonable. But then, with these sentence elements simple and reasonable, there should be an incessant drill both in sentence construction and in sentence analysis until the children feel comfortably certain of the correctness of their speech and writing, and thoroughly at ease in using the English language. Speed the day!

Below the seventh grade whatever textbooks are made to assist pupils and teachers in the study of language by the functional method may be called language lessons; but this summarizing book will be a functional grammar, or following the analogy of the many "Little Theaters" it might properly be called a "Little Grammar."

When grammar was banished from its happy home and became a wanderer, it went out a very important volume of three or four hundred pages. But as it comes back and gently asks to be admitted once more as a hired servant in its old home, it comes stripped of its old-time nonsense. With all its tools (exercise, drills, sentences for analysis, directions for sentence building, etc.) it will be but a modest volume of a hundred pages or so; about enough for a leisurely half-year's work in a seventh grade—work that might be repeated in the eighth grade in a period of ten or twelve weeks, for the sake of making a deeper impression. Surely when such a useful and humble suppliant comes knocking for admission not even the colossal and impressive General Education Board could have the heart to deny it a place, say, as valet to folk-dancing or tatting.

It's easier to bang off a blunderbuss, and that species of fire-arm makes a bigger noise; but while requiring ten times more skill, the silent high-power rifle brings down the game and costs much less to fire.

THE SOCIAL MOTIVE IN THE TEACHING OF ARITHMETIC

W. C. REAVIS
Harris Teachers College, St. Louis, Missouri

During the past year the writer and Miss Irene M. Kiser, departmental teacher of arithmetic in the Pierre Laclede School of St. Louis, used the following plan in teaching stocks and bonds to an eighth-grade class. The purpose of the plan was to vitalize a phase of the work in arithmetic that ordinarily offers great difficulty to pupils, by making use of a project that appealed to the social motive.

A mock bank was organized, in which each member of the class studying stocks became a stockholder. Certificates of stock and other commercial forms connected with banking were worked out and printed on the school press. These certificates were then sold in different denominations to the different members of the class. This stock was sold at market quotations which were listed on a bulletin board by officials at different times during the recitation. The pupils thus became conversant very quickly with the terms used in stock transactions and understood the effect of changes in prices on the value of their personal stock already purchased.

Problems in buying and selling were next undertaken by the class, and the results worked out first for the individual directly concerned in the transaction and then for the corporation. The newspaper quotations were carefully noted in this connection, and hypothetical problems were made up and discussed by the class. When purchases and sales were made and dividends or deficits declared, the appropriate commercial forms were used in completing the transaction. This afforded excellent practice in the use of conventional forms, such as deposit slips, checks, and notes.

The following general cases were worked out inductively by the class through participation in the various transactions:

Case I. To find the income from a certain number of shares of stock paying certain annual or semiannual dividends.

Case II. When money is worth a certain percentage, to find the profits of the investment on a certain number of shares paying certain dividends (*a*) when bought at par, (*b*) above par, (*c*) below par.

Case III. To find the dividends that can be declared on certain net earnings of a corporation.

Case IV. To find the value of stock bearing certain per cent dividends, when the amount of dividends is known.

Case V. To find the rate of income on the investment.

Case VI. To find the rate of assessment to make up a certain deficit resulting from losses to the corporation.

Case VII. To find the price one can afford to pay for stocks paying certain dividends, in order to realize certain profits on the investment.

Case VIII. To find the net profits on stock paying certain dividends, after deducting rate of taxation.

In the teaching of bonds, officers were chosen by the class to represent the board of education, and these submitted a proposed bond issue for school purposes to the members of the class, who represented the voters of the city. After the proposition was approved by the voters, the kind of issue, rate of interest the bonds should bear, the length of time for maturing the bonds, and the probable market value of the issue were discussed. Sample bonds were brought in and examined by the class, and it was finally decided to float a serial issue that could be matured in ten years. A form was then prepared and printed, the coupons dated, and the rate of interest fixed before the bonds were offered for sale to the members of the class.

The following cases were then developed inductively as in the case of stocks:

Case I. Find the cost of certain bonds bought at par, above par, or below par. Purchase made through a broker.

Case II. Find the rate of interest actually received on money invested in certain bonds bearing a certain rate of interest, when bought at, above, or below, par.

Case III. Find the annual income expected from the purchase of a certain number of bonds bearing a certain rate of interest, when bought at, above, or below, par.

Case IV. Which are more profitable, bonds bearing a certain rate of interest bought at, above, or below, par; or bonds bearing a lower rate of interest bought below par?

Case V. Assuming that money is worth a certain percentage, what can one afford to pay for bonds bearing a certain rate of interest?

Case VI. Find the amount that must be invested in bonds bearing a certain rate of interest to yield a certain annual income.

In order to measure the results of this work, it was decided to give as a test the ten following problems in stocks taken from p. 194 of the *Stone and Southworth Arithmetic*, Book III. The time was arbitrarily set at twenty-five minutes, and work stopped when time was called.

1. What is the market value of 35 shares of North Western stock at $43\frac{1}{2}$ per cent above par?

2. What would be the value of the same stock if sold at the same rate below par?

3. I receive a stock dividend of $1,728. This is at the rate of $14\frac{2}{5}$ per cent on the par value of my investment. How much of the stock do I own?

4. A man exchanges 170 shares of stock worth 103 in the market for a cottage at the seaside valued at $8,510. The difference was made up in mill stock at a par value of 50 per share. How many shares were there? Leave brokerage out of the account.

5. A gentleman bought 1,200 shares of railroad stock at 115, and was glad to sell it at 58. What did he lose?

6. The Atlantic Steamship Company is capitalized at $8,000,000. The receipts for the year are $16,400,000. The expenses are $14,800,000. $600,000 is put into a reserve fund, and the remainder distributed as a dividend. What rate per cent of dividend was declared?

7. How many hundred-dollar shares of mining stock can be bought at 118 for $3,750, and what sum will remain? (Parts of a share are not sold.)

8. I receive $2,133 as the net profits of stock bought at par and sold at 107. How many hundred-dollar shares were sold, allowing $\frac{1}{4}$ brokerage?

9. My broker paid me $8,595 which he had received for Old Colony railroad stock sold for me at $\frac{1}{8}$ brokerage. How many shares did he sell at 215?

10. In the N.Y. stock market 50,000 shares of railroad stock were bought at a premium of $22\frac{7}{8}$, and sold the next day at a premium of $26\frac{3}{4}$. The brokerage in each case being $\frac{1}{8}$, required, the profits.

The class work was completed March 15, 1917, and the foregoing test was given March 16. There were 22 pupils in the class. Of these 21 were present and took the test. Fifteen pupils worked all the problems correctly in twenty-five minutes, 2 pupils had nine right out of nine attempted, 1 pupil had eight right out of nine attempts, and 3 had seven right out of seven attempts.

The same test was given on the opening day of school, September 5, 1917, to the same class following an interval of 90 days of school during which time no attention was given to the work in stocks and bonds, and a vacation of 80 days. Of the 15 pupils who had ten right out of ten attempts, 13 again made perfect scores in the same time, 1 fell to eight rights out of eight attempts, and 1 was not present to take the test. One pupil raised his score from seven rights out of seven attempts, to nine right out of nine attempts, 1 from seven rights out of seven attempts to eight rights out of eight attempts, 1 from eight rights out of nine attempts to nine rights out of nine attempts, 1 retained a record of seven rights out of seven attempts, 1 changed from nine rights out of nine attempts to nine rights out of ten attempts, and 1 who was absent when the first test was given took the later test and worked nine right out of nine attempts.

SUMMARY

Problems Attempted	Problems Right	Pupils First Test	Pupils Second Test
10	10	15	13
10	9	0	1
9	9	2	4
9	8	1	0
8	8	0	2
7	7	3	1

The results given in the foregoing table are offered as an example of the thoroughness and persistency of learning with one class when the work presented was made real and concrete, and the method provided group activity in which the social motive was very pronounced. In this connection I desire to call the attention of city teachers especially to the unlimited possibilities for similar purposeful work in much of the arithmetic offered in our city schools. Projects related to handwork, household arts, elementary science, games, the administration of the school, community problems, work growing out of conventional business forms, etc., may be found in abundance, and may be used to vitalize the work through the appeal they make to social motives and group activities.

AN OUTLINE OF THE COURSE IN GEOGRAPHY IN THE UNIVERSITY ELEMENTARY SCHOOL. IV

Prepared by the Teachers of Geography:
BERTHA HENDERSON ADALINE SHERMAN
KATHERINE McLAUGHLIN GRACE STORM
EDITH PARKER

GRADE 6

AFRICA (*Continued*)

The German colonies of Africa are compared with the French and English colonies. The more important facts which stand out from such a comparison are the following: The German possessions are widely separated. They lie in the tropical part of Africa. Acquisition of the Belgian Congo would knit these territories into an east-west belt of German possessions. By the treaty of 1912 Germany secured New Kamerun by permitting the French protectorate to be established in Morocco. German East Africa breaks the chain of British possessions from Cairo to the Cape. It is impossible to complete both the north-south line which the British cherish and the east-west belt which Germany desires. The evils of territorial aggrandizement are plainly evident in the international jealousy that arises in such a case as this.

Any questions that the discussion of French, English, and African colonies has aroused in the minds of the children concerning the other African colonies are given consideration before the close of the study of Africa. In conclusion there is discussion of any additional points regarding the comparative importance of South America and Africa that have been gained from the study of the colonial possessions.

AUSTRALIA

The map-reading of Australia serves as an individual test of the ability gained in this kind of geographic work in the study of South

America and Africa. Hence the map of Australia is read by each member of the class, and his interpretation is not compared in class with that of others, but discussed in a conference with the teacher. This gives an opportunity to remove for each individual any uncertainty about how to read maps.

Subjects are assigned to be worked out by individuals and presented to the rest of the class. Since our printed material about Australia is written in English (in contrast to South-American material in Spanish) and since the fundamental geographic problems of this continent do not differ in kind from those which the pupil has met in the study of other continents, this method of treatment occasions no serious difficulty. The way in which a pupil's material is collected, used, organized, and presented to the class is an excellent test of what the child has learned about the handling of material from his previous training. Effort is made to overcome the pupil's childish tendency to include in his collection Australian pictures "because they are pretty" when they have no particular bearing on the topics he is illustrating and when he has no clear idea of what they do illustrate. He must either discard the picture or make a clear explanation of why it is a valuable illustration. Praise is given for quality of organization and judgment in selection rather than for mere quantity of illustrative material.

Such treatment also affords an opportunity for practice in taking notes. After each child talks to the class opportunity is given for the writing of notes on the subject. If the talk has been clear and well organized, notes are easy to take. If not, the many questions asked show the one who has talked that he failed to make clear his main points.

Children design the covers for their books of collected materials in the drawing periods. They usually employ as a decorative unit an Australian animal, tree, flag, seal, or landscape. (Refer to "Course of Study in Drawing.")

Much information in the form of illustrated pamphlets is furnished by the "Australian Society of Chicago," the "Commonwealth Bureau of Census and Statistics, Melbourne," tourist bureaus in all large Australian cities, and railroad and steamship

lines. Australian newspapers also may be easily obtained. The topics assigned include the following:

The Aborigines of Australia
Brief History of Australia
Government of Australia
Sheep Raising in Australia
The Cattle and Dairy Industry
Farming in Australia
Irrigation—the Closer Settlements Acts
Mining in Australia
Fruit Culture in Australia
The Railroads of Australia
Cities of Australia
Tasmania
New Zealand
A Comparison of Australia and Argentina with South Africa
The Coral Reef
Routes to Australia
Manufacturing in Australia
Plants of Australia
Animals of Australia
Lumbering in Australia
Australian Beauty Spots (National Parks, etc.)
Canberra, the New Australian Capital

Both teacher and children suggest the topics. Great freedom is permitted in the organization and presentation of reports. Special maps and graphs are made to accompany individual reports. Originality is encouraged. The pupils often use the projecting lantern to show small pictures to a class.

Map-tests similar to those described in the course on South America are given. At the close of the study the pupils invite as guests of the class someone who has been in Australia and who is willing to spend an hour or two in amplifying reports about Australia and in answering questions. Sometimes the teacher of English is invited to hear the Australian reports and to read to the class some Australian poems by native poets or some of Kipling's verses such as his "Hymn to the Native Born." Such visits serve to make very real the present-day life of the continent.

Standards of attainment.—Children should know as a result of the work of the sixth year the essentials of the place geography

of the Southern Hemisphere. They should have a conception of the various phases of geography—the economic and commercial, the political, and the physiographic. They should begin to see the interrelation and interdependence of the various phases. They should have strengthened *right* habits in the use of books, maps, and other geographic material. The year's work should have increased their interests and widened their sympathies with fellow-races and nationalities. It should have encouraged, finally, a desire to be informed about what is taking place in the world.

Textbooks.—

Bowman, *South America*
Carpenter, *South America*
———, *Africa*
———, *Australia*
Brigham and McFarlane, *Essentials of Geography*, Second Book

Teachers' references.—

C. R. Enock, *The Republics of South and Central America*
Bryce, *South America*
Hale, *The South Americans*
Martin, *Through Five Republics of South America*
Mill, *The International Geography*

Much valuable reference material is to be found in *The Australian Commonwealth*, published by the Australian government, and in journals, especially the *National Geographic Magazine*.

Time requirement.—

80 lessons, 1 hour each:
50 lessons, South America and preliminary work
20 lessons, Africa
10 lessons, Australia
½ of each hour, recitation
½ of each hour, supervised study

GRADE 7

General statement.—The course in geography in the seventh grade consists in part of a review for the purpose of summarizing and clinching the more important geographic principles. This involves gaining much new geographic knowledge as well as recalling and reorganizing many facts already learned. The course consists

further of a study of the need of conserving our national resources, the principles of such conservation, and effective means of securing it.

The review.—The review takes the form of the solution of problems such as the explanation of the density and distribution of population in the United States. In developing the problem, maps are consulted first, and the reading-matter of the text and of supplementary material serves to corroborate conclusions made from map-study and to give additional information.

Since the scope of the review affords considerable choice of problems, the one here discussed is included, not as a rigid outline of subject-matter, but as an example of the kind of work done, the material used, and the type of development stressed. References below are to Brigham and McFarlane, *Essentials of Geography*, Second Book.

From a population map of the United States, page 49, the striking facts concerning the distribution of population are read. It is seen that the region east of the one hundredth meridian is, in general, more densely populated than the region west of it; that there is dense population in the West in scattered areas only; that population is densest in the northeast quarter. From a consideration of these facts questions are raised for class discussion such as, Why should the eastern half of the United States be more densely settled than the western half?

One reason is found from the maps on pages 104, 105, 122, 136, and 138. These maps show the important regions of production of corn, wheat, cotton, tobacco, and sugar in the United States. From these it is seen that agriculture is carried on in almost all the eastern half of the country, but only in scattered areas in the western half. Why is the agricultural area limited to the eastern part of the country and to scattered regions in the West? By comparison of product maps with relief, isothermal, and rainfall maps, topographic, temperature, and rainfall conditions of the producing regions are found. The amount of rainfall and its distribution relative to the growing season are seen to be important factors in limiting the agricultural regions. The reasons why agricultural regions, as a rule, support more people per square mile than regions

too arid for agriculture are discussed. It is finally concluded that one reason for the population in the East being denser than that in the West is the greater amount of rainfall well distributed with reference to the growing season.

At this place children often raise the question, Why is there more rainfall in eastern United States than in western United States? Since the study of cyclonic storms, weather maps, and the causes of rainfall in the United States is a part of the science course of the seventh grade, the problem is set aside to be dealt with there. It serves, however, to motivate that work.

How does the production of minerals affect the distribution of population? From the maps on pages 82 and 168 and from reading it is seen that gold, silver, and copper are found largely in the West, and iron, oil, gas, and coal of good quality more largely in the East. The great influence of minerals in bringing population to the West is discussed. The rise and decline of mining communities dependent entirely upon exhaustible supplies of minerals are noted. The great importance of coal and iron in industrial development and in the support of a manufacturing population is emphasized.

How do transportation and power facilities affect the distribution of population? A review of the topography, drainage, and coast line brings out such contrasts and comparisons as the following: Much of the West consists of high mountains and plateaus cut by deep canyons. The highlands are less extensive and less formidable in the eastern half. There are more rivers in the East than in the West. The eastern rivers afford more navigable waterway mileage than do the western rivers. Many western rivers flow in deep canyons and so are less accessible than eastern rivers. Rivers of the Great Basin flow into interior lakes or sinks, and offer no highways to the ocean from the interior. The West has no lakes to compare with the Great Lakes of the East. The Atlantic coast line is irregular and affords many harbors. The Pacific coast line is relatively regular and furnishes few harbors. The railroad net of the East is dense, that of the West light. It is concluded that, on the whole, the East offers better transportation facilities than the West. Other things being equal, this tends to make population denser in the East than in the West.

How do manufacturing possibilities affect density of population? From map-study and reading it is found that the principal manufacturing section is the northeast quarter of the United States, and that factors influencing this concentration of manufacturing are nearness to raw material, command of power, and accessibility of market and labor supply. The reasons why population tends to be more dense in manufacturing regions are discussed and the fact is brought out that manufacturing and commercial population tends to concentrate in cities. From a study of the location of the more important cities the following generalizations are made:

1. Commercial cities grow up
   a) Where large-scale collection and large-scale distribution are possible
   b) Where mode of transportation is changed on important lines of communication, such as
      (1) Good ocean and lake harbors
      (2) Near mouths of navigable rivers
      (3) At heads of river navigation
      (4) Junctions of large rivers
      (5) Great bends of rivers
      (6) Falls and rapids
   c) Where routes of trade focus, as at
      (1) A river ferry
      (2) A mountain pass
2. Manufacturing cities are usually the commercial cities, but distinctly manufacturing cities may be located
   a) Near power resources
   b) Near raw materials and markets

The conditions are seen to be conducive to the development of such centers in more places in the northeast quarter of the United States than in the West.

This is by no means an exhaustive list of the questions that arise in the discussion of this problem. Those here cited serve to show the type of procedure followed with any which it seems practicable to discuss.

Care is taken throughout the discussion to observe that in many regions of the West conditions make possible the support of dense populations.

As questions that are not practicable for immediate discussion are asked by the pupils, they are listed where all members of the class may have access to them. Often one member can answer

the query of another. Sometimes later reading and discussion answer it. Sometimes the questions afford subjects for later class discussion or debate. Questions that excite strong differences of opinion in the class are sometimes debated by chosen teams. Such a question is, Which is the more influential factor in determining the location of manufacturing industries, power or nearness to raw materials?

Throughout the development of the problem the blackboard outline map of the United States is used almost daily. The pupils are definitely held responsible for the place geography on which each step of the problem is based. They are required to be able to show on an outline map of the United States, such as Goode's No. 9, or No. 10A, the approximate location of the regions of greatest production of each of the more important agricultural products, the more important railroad lines, the mountain ranges and plateau regions discussed, and the more important cities and rivers.

Oral reviews are used to fix, not only facts, but principles. Various geography "spell-down" games are played. Questions are asked that can be answered in a word or a short phrase: for example, Give an example of a city that has developed on a river at the head of ocean navigation; Name a factor important in establishing cotton manufacture in New England.

Population maps of the later census reports are used in reviewing and summarizing the topic. A given area is pointed out on the map and its population is noted in 1890, in 1900, and in 1910. The density of the population and its variation from time to time are accounted for in as many ways as possible. This serves the twofold purpose of showing the interrelation of the various factors and of discovering some factors not discussed in the general consideration. Moreover, it gives the pupil practice in the reorganization of material.

Consideration is next given to the problem of the needs of the future population of the United States. The population curve is graphed from 1800 to the present time. Probable future increase is discussed, assuming that atmospheric conditions and heat supply remain essentially unaltered. The question is asked, Upon what does their support depend? The four great classes of natural resources are seen to be land, water, minerals, and forests. How

will increase in population affect per capita share of natural resources? What will determine ultimate population capacity?

How does the amount of the production and use of the more important foodstuffs, textiles, minerals, and forest products in the United States compare with their production and use in other countries? Maps and statistics on pages 403–10 of Brigham and McFarlane, the *Year Book of the Department of Agriculture*, the *Statesman's Year Book*, Census Bureau publications, and similar sources are used as reference material. The more important regions of production of a given commodity, wheat, for example, are listed and ranked with reference to total production, to per capita production, to amount exported, and to amount imported. Has the tendency in each region been toward increased or decreased production? increased or decreased exportation? importation? What is the meaning of this tendency?

This affords an excellent field for individual work. Each child is responsible for giving to the class the statistics for one or two products and for interpreting them. Graphs are made in order to present the statistics to the class in more readable form. Incidentally a quick review of some of the important phases of commercial geography is accomplished.

As our average per capita supply of natural resources decreases, what hope is there of depending upon these other regions of production? The limiting factors are examined in the different regions. The problem of supporting future population is seen to be a serious and world-wide one. What can the present generation do about it? A discussion of this matter shows that it is not our duty to cease to use the natural resources, but that it is our duty to use them efficiently, without waste, to increase them where possible, and even to create them in some instances.

How may our land resources be increased? Four general means are cited and are then discussed in more detail:

1. By reclaiming arid and swamp land
2. By minimizing soil erosion
3. By maintaining or increasing soil fertility
4. By increasing crop yields per acre

Outlines are included which show the main ideas around which the work is organized.

Irrigation
- Irrigation as carried on by the Mormons
- Irrigation by private or co-operative means
- Study of the flow of a typical western river in the arid section to show its erratic nature and wasted flood waters
- The Reclamation Act of 1902
- A study of one or two of the government projects (optional reading listed about the others)
- The amount of land reclaimable by irrigation
- The benefits derived from irrigation
- The need for more people on the government irrigation projects now
- The need for the reform of laws with regard to water rights
- The need for research and educational work to help solve the special problems of the irrigation farmers

Reclamation of swamp land
- The amount and location of land that can be reclaimed
- The means of reclaiming swamp land
- The benefits of reclamation

The limiting of soil erosion
- Pictures showing kinds of direct and related damage done
- Amount of damage done
- Means of decreasing it

Maintaining soil fertility
- The essential elements: nitrogen, phosphorus, potassium
- Causes of soil depletion
- Ways in which soil fertility may be maintained and increased

Means of increasing crop yields
- Use of better agricultural methods and new systems
- Use of better seed and of plant varieties better suited to the conditions of moisture, heat, etc.
- Reduction of damage from insect pests, rodents, weeds, plant diseases, harmful bacteria, and toxic bodies
- Use and disposal of the public domain

How shall the lands still owned by the public be best utilized? A discussion of the harmful abuse to which public grazing lands have been subjected leads to the conclusion that laws should control the use of resources in the public domain. To the end of securing the best use of such resources it is seen that mineral rights and surface rights should be separated. In order to know how to use lands rightly they should be classified according to their best practicable use. Finally reserves, sometimes temporary, sometimes permanent, should be made of areas valuable for timber, water supply, mineral deposits, unique natural beauties and wonders, etc.

In connection with the discussion of the preservation of natural beauties and wonders individual reports are made describing the more important of our national parks and monuments. Many pictures are shown. Suggested vacation trips are planned and described to other classes or to parents with the definite aim of helping the "See America First" campaign. The *National Parks Portfolio* issued by the Department of the Interior supplies much of the desired information. Railroad folders and current magazine articles are also good sources. In these talks the benefits of maintaining the parks and monuments are pointed out.

Forests.—After a survey of the location, kind, and amount of our original forests the story of their rapid exploitation is read. The question arises, How can our forests be maintained? It is clear that production must be made to equal consumption if the supply is to remain undiminished. It is also seen that the possibility of renewing the forests makes our neglect to maintain them unpardonable. Further discussion is organized under the topics:

Means of Increasing Production
Means of Decreasing Consumption

As in the case of soil erosion, pictures are used to show the disastrous effects of not caring for the forests and the good results of scientific forestry.

Minerals.—As in the case of forests the subject is handled by discussing the topics:

Wastes Now Permitted in Connection with Production and Consumption
Means of Preventing These Wastes

Water resources.—First is stressed the interrelation of problems of navigation, flood control, use of water for city water supply, sewage, water power, fish culture, etc. Evidently some of these interests are antagonistic to others. What should be done to get the *best* use of our water resources? It is seen that all interests should be considered before decisions are made, and the decisions should rest in the hands of experts. Relations of streams to one another should also be considered in their improvement. With these general qualifications in mind, discussion turns to:

The Wastes Now Permitted in the Use or Non-use of Water
The Remedies Now Practicable

Human conservation.—There remains to be emphasized the fact that the *people* of the country are responsible for the use or misuse of our national resources. The extent to which population can be maintained in the future depends partly upon the extent to which the present generation wastes these resources. Since the human factor is so important, it follows as a corollary that the education of humanity to the point of practicing the most efficient use of human powers without waste is one of the highest types of conservation.

References on conservation.—

C. R. Van Hise, *The Conservation of Natural Resources of the United States*
Salisbury, Barrows, and Tower, *Elements of Geography*, pp. 445–63; 266–69, 270–72, 557–61, 282, 289, 442, 286–87, 328, 403
Hornaday, *Our Vanishing Wild Life*
Fairchild, "New Plant Immigrants," *National Geographic Magazine*, October, 1911
Bibliography in Salisbury, Barrows, and Tower, *Elements of Geography*
Report of the National Conservation Commission, Sen. Doc. No. 676, Sixtieth Congress

Standards of attainment.—Where pupils have completed the Elementary School course in geography they should know how to use maps and books to gain geographic knowledge. The *essentials* of place geography they should have gained *permanently*. They should have grasped in its simplest form the idea of the geographic forces underlying the social, economic, and political conditions of which they have learned. They should know the more important facts concerning the resources of their own and other nations and should have an elementary knowledge of how these resources can be most wisely handled in order to serve humanity in the best possible way. They should have developed through such comprehension an appreciation of fellow-lands and fellow-peoples. They should have a glimpse of the vastness of the geographic field and should be aware of the importance of having a knowledge of geographic principles in interpreting present-day affairs.

Time requirement.—

80 lessons, 1 hour each
- 40 lessons, geography of the United States
- 40 lessons, conservation problems
- ½ of each hour, recitation
- ½ of each hour, supervised study

HISTORY OF THE TEACHING OF HANDWRITING IN AMERICA

MARY L. DOUGHERTY
Iowa State Teachers' College

The five periods.—The teaching of handwriting in America may be divided into five periods based on the dominant influence or interest at the time. These are the Colonial Period, 1600–1800; Transition Period, 1800–1850; Period of Independent Elaboration of American Systems, 1850–1890; Vertical-Writing Movement, 1890–1900; Combination of Commercial and Scientific Influences, 1900–1916.

COLONIAL PERIOD, 1600–1800

During this period English texts were almost exclusively used. The acquisition of writing skill was so highly esteemed that it was common to have schools devoted solely to the purpose of teaching this art. In spite of many handicaps of material and method Wickersham says (16, p. 205)[1] that handwriting was better taught than most subjects, and Ward says (15, p. 64) that, judged by some preserved specimens of the handwriting of the Colonial children, it was equal to, or better than, that of a later date. Littlefield (9, p. 81) reports two young men "licensed to teach writing." Bates reports (1, pp. 403–18) Abiah Holbrook, master of South Writing School in Boston, at 100 pounds a year with 260 town children under his care and the information that his salary was "left for the most part unpaid for years together" and that "he paid back one fourth of his salary in taxes yearly."

Methods and influence of materials.—During this period the methods of teaching handwriting were very uneconomical. This was due in large part to the crude materials available. The quill pen requiring so much of the master's time to make and keep in order was a source of much wasted time. The necessity for setting individual copies also took time that might have been spent in

[1] Numbers refer to sources given in bibliography.

teaching the children to write. Birch bark was often used for copy-books because of the cost of paper, and where paper was used it was rough and dark (15, p. 64). In many cases children ruled their own paper with a lead plummet, the forerunner of the lead pencil. Ink was made of nut-galls bruised in water with rusty nails (16, p. 192). The invention of lithography affected the teaching of handwriting favorably by providing a medium for the presentation of examples of good penmanship. From this time on copy-slips or copy-books of some kind took the place to a large extent of the "copy-setting" by the master.

TRANSITION PERIOD, 1800–1850

With the reorganization of the government after the Revolution came a revulsion against everything English which extended to educational matters. This led to the attempt to provide American texts for the schools. Writing-books came into use containing ruled lines, but at first without copies. Steel pens superseded the goose quill and lead pencils the plummet. As the use of engraved copies became common, class instead of individual instruction was used, and the teacher, freed from quill pens and copy-setting, gave the lesson-time to criticism of the writing of the children.

Two separate influences are traceable during this period. Possibly the revulsion against England and the friendly attitude toward France had something to do with the adoption of Pestalozzi's theories as to the teaching of handwriting. These theories involved the use of an extreme synthetic method in the teaching. Four or five guiding lines resembling the staff in music were used to measure exactly the height of the letters, and spacing was regulated by vertical crosslines. The elementary strokes as slants, curves, loops, and turns were taught first and identified by number. These were joined by being written from dictation so as to make words. This is so characteristic a part of the method that one author says (11), "The teacher does not dictate a letter but pronounces in succession each element of the letter which the writer follows without thinking of the letter itself."

The second influence of this period is that of muscular-movement writing. Here the manner of writing was of first importance and

form took second place. This originated with Carstairs, of England. He developed quite an elaborate system of exercises to be used in training for the proper movement. The work was introduced into this country by B. F. Foster (6). He says that the system is "based on the unerring laws of nature as developed in the anatomy of the arms, hands, and fingers." The fundamental theory is that an easy, flowing hand is only possible by ease in the motion of the member of the body executing the movement. This is acquired by free action of the several parts found connected together for use in writing. Therefore the joints of fingers, wrist, and elbow are all brought into play, and the arm is the producer of the combined movement (6, p. xvii). The first consideration is freedom of movement without regard to form. A somewhat elaborate contrivance of tape harness holds the fingers in the correct position and without movement until the form has been learned. The forms of letters are explained and taught while the fingers are in the harness, and exercises in ovals are also given. Then the fingers are freed and may be used in the small details. The further statement is made that by this method writing is easily learned with small classes in twenty lessons of one hour each, provided the pupils practice from six to twelve hours a day (6, pp. xviii, xix). Variations of this method have had more or less influence in every course in handwriting which has been published. The principal variation in this factor has been in the amount of finger movement to be allowed. Some of the most extreme courses insist that there shall be absolutely no finger movement.

PERIOD OF INDEPENDENT ELABORATION OF AMERICAN SYSTEMS, 1850–1890

During the last period all the fundamental questions with regard to the teaching of handwriting were raised—the method of teaching, styles of writing, position, and desks. It remained for this period to attempt a solution of these questions. The first result of the work of this period appears in the combination of the two distinct types of the last period with different relative importance being given to the two factors by the different systems. The synthesis

which had been used in the teaching of letters was applied in the teaching of movement, where the plan was to teach the elementary movements first and to combine these into more complex movements. The combined arm, forearm, and finger movement of Carstairs became narrowed to the extreme arm movement, sometimes called the forearm or muscular movement.

A distinct type of letter forms also developed in this period. Spencer, one of the pioneers in this field, tells us concerning his system (14, p. 116): "The peculiarity of its prominent features consisted in selecting from nature the elliptical curve which nature most delights to employ—as adapted to the laws of motion—for its controlling model." With this curve as the basis was built up the letter style known as the Spencerian, from which most of the modern forms have been adapted. During this period came, too, the arranging of books in series graded to fit the stage of development of those who were to use them. This was one of the results of the adoption of a graded system in public schools where the number of children warranted the use of the plan.

At about this time the demand for more efficient writing led to the establishment of especial writing classes in commercial schools. From these schools there came a number of courses for the teaching of writing to be used in the public schools. The criticism which may be made about many of these courses is that their authors lacked direct contact with child-problems and so failed to adapt the work to the elementary stage of development.

THE VERTICAL-WRITING MOVEMENT, 1890–1900

From France and Germany first, and later in this country, came the agitation for vertical writing, its claims being based on superior hygienic conditions. It was soon evident that the front position and vertical writing did not remedy faults of posture or eyestrain, and it was found to be inefficient from the viewpoint of speed and legibility and so was abandoned. The front position of body was adopted into a number of succeeding systems, but a slant position of the paper was accepted as more desirable. The reaction was to a less extreme slant than that previously used.

COMBINATION OF COMMERCIAL AND SCIENTIFIC INFLUENCES, 1900–1916

The demand for efficiency in writing in both speed and form continued to be made in commercial situations. The development, chiefly in commercial schools, of drill methods included movement exercises and some use of rhythm by counting. These methods tended also to influence somewhat the teaching of public-school writing. The use of drill necessitated a larger amount of paper. This was supplied in some cases by practice pads or loose sheets in addition to the copy-book, and in some cases by the substitution of copy-slips with pads or loose sheets, for the old-style copy-book. The demand for speed resulted in a simplification of the form of the letters with an elimination of all nonessentials. In some systems this was carried to an extreme and all the beauty of the writing was lost.

As more definite training of teachers came to be required for all the work, the problem of training teachers for the teaching of handwriting became prominent. Some of the makers of handwriting systems provided for this by correspondence courses leading to diplomas, or certificates of proficiency, and many school systems required their teachers to secure such a certificate. Practically all systems at the present time give attention to both movement and form with different relative stress in the different systems.

Standardization through grading the product.—The many attempts to provide a course for the teaching of handwriting all seem to fail in certain fundamental requirements of a good teaching method. There is little provision for controlled observation or for testing the results of the work.

Scales and surveys.—The first attempts at such provision were made by educators entirely unrelated to any handwriting system. Dr. Thorndike and Dr. Ayres have produced scales based on differing principles for the scoring of the handwriting product. Dr. Freeman has organized a scale which, besides furnishing a basis for scoring the product, provides a means for analytical study which will lead to improvement of the technique. These scales have been used in surveys of handwriting. The Ayres Scale was

used in the grading of handwriting from the schools of fifty-six cities, and the averages from this survey have been accepted tentatively as the standard score for each grade in the elementary school. A number of other scales have recently been devised with the idea of meeting local needs or for use with a particular system. This objective study of the product is the first step in a scientific study of the subject and is probably of more value than any study which preceded it.

The next step in the scientific study of handwriting was an experimental study of the process involved. This work was begun in Europe and has been carried forward by Dr. C. H. Judd and by Dr. F. N. Freeman and his assistants. This work is important because if any degree of uniformity is ever to be established in the teaching of handwriting it will be through the influence of a study of the writing technique from the standpoint of efficiency. Early results of this study are reported in *The Teaching of Handwriting* (7). Recently the use of moving pictures of children's writing as a means of learning how they write; the formulation of hypotheses as to desirable changes to be made in their technique; the introduction of definite training to produce these results; and a comparison of the results, as shown by means of moving pictures, with the original writing have been used as a means of determining desirable procedure. As an auxiliary method of analyzing the technique a modification of the Judd tracer has been used to determine the relation of finger and arm movement to quality of writing. The results of this work seem to indicate that good position and free rhythmic movement are important factors in efficient handwriting. The principles developed here were incorporated in an experimental course which has been used under conditions of a scientific experiment for one year in the public schools. The study of the results of this experiment is reported in a Master's thesis at the University of Chicago.

It seems probable that from this objective study by scale and this experimental study of the process the teaching of handwriting may reach a degree of standardization as to method of teaching and quality of performance that will lead to greater efficiency than is possible at present.

BIBLIOGRAPHY

1. Bates, Wm. Carver. "Boston Writing before the Revolution," *New England Mag.* (December, 1898), pp. 403–18.
2. Bennett, Maurice E. *Method in Teaching Handwriting.* 2d ed. Pittsburgh, 1909.
3. Carstairs, J. A. *A New System of Teaching the Art of Writing.* London: Wm. Molineaux, 1814.
4. Carver, James. *A New and Easy Introduction to the Art of Analytical Penmanship, etc.* Philadelphia: W. Hall, Jr., and G. W. Pierie, 1809.
5. Clark, Albert W. *Public-School Penmanship.* Ginn & Co., 1909.
6. Foster, B. F. *Practical Penmanship, a Development of the Carstairian System.* Albany, N.Y.: O. Steele, 1832.
7. Freeman, Frank N. *The Teaching of Handwriting.* Boston: Houghton Mifflin Co., 1915.
8. Jackson, John. *Theory and Practice of Handwriting.* Revised ed. Harrison, N.Y.: Wm. Beverley, 1894. (First advocate of vertical writing found.)
9. Littlefield, George Emery. *Early Schools and School Books of New England.* The Club of Old Volumes, 1914.
10. Kirby, J. Albert. *Penmanship, the Kirby Rhythmic Method.* New York: Newson & Co., 1916.
11. Parker, John. *A Manual of Writing Founded on Mulhäuser's Method of Teaching Writing.* London, 1842. (Especially designed for monotorial schools.)
12. Payson, Dunton, and Scribner. *Manual of Penmanship.* New York: Wollworth, Ainsworth & Co., 1873. (1881 ed. used.)
13. Smith, W. Anderson. *"According to Cocker," The Progress of Penmanship from the Earliest Times.* London: Alex. Gardner, 1887.
14. Spencer, P. R. *Spencerian Key to Practical Penmanship.* Prepared by H. C. Spencer. New York: Ivison, Phinney, Blakeman & Co., 1867.
15. Ward, Wm. (compiler). *Early Days of Naugatuck, 1750–1830.* Naugatuck, Conn.: The Perry Press, 1906.
16. Wickersham, James P. *History of Education in Pennsylvania.* Lancaster, Pa.: Inquirer Pub. Co., 1886.

THE ABILITY TO PLACE THE DECIMAL POINT IN DIVISION

WALTER S. MONROE
Director, Bureau of Educational Measurements and Standards,
Emporia, Kansas

A number of investigators have given data to show that "ability" in arithmetic consists of several specific abilities rather than a single ability. It has been stated that there are as many different abilities as there are different types of examples. The purpose of this study was to analyze the ability to place the decimal point in the division of decimal fractions.

The method of study was to construct a series of tests each of which called for the placing of the decimal point in slightly different types of examples. Since it was desired to test merely the ability to place the decimal point, the answers were given with the exception of placing the decimal point, as shown in the test which is reproduced below. Test I[1] is reproduced to illustrate the type of

DECIMAL TEST I

The correct answer for each example is given at the side immediately after the letters "Ans." Write it in its proper position and place the decimal point in its proper place.

3)16.2 Ans.: 54	7)1.82 Ans.: 26	5).415 Ans.: .83
6·)7.44 Ans.: 124	8).952 Ans.: 119	4)87.6 Ans.: 219
2).144 Ans.: 72	8)40.8 Ans.: 51	9)3.42 Ans.: 38
3) 47.4 Ans.: 158	7)8.61 Ans.: 123	5).965 Ans.: 193
9)5.76 Ans.: 64	4).348 Ans.: 87	6)51.0 Ans.: 85
2).748 Ans.: 374	3)89.1 Ans.: 297	5)6.85 Ans.: 137

Name.....Grade.....Date.....

[1] A series of tests upon decimal fractions similar to these can be obtained from the writer.

tests and the form in which they were given to the pupils. In Test I, the divisor is an integer in no case greater than nine. The dividends are of three types. The examples are arranged in the test so that the different types of examples recur in regular cycles. Test II is of the same general type as Test I with the exception that the divisors are all tenths. Test III was constructed identical with Test I except that the divisors were hundredths instead of integers. Test IV is a composite test involving a number of different types of examples in long division.

These tests were given to three groups of pupils by an advanced student[1] working under the direction of the writer. This student had had considerable experience in giving tests. The pupils also had been given the Courtis Standard Research Tests, Series B, the previous year. A mimeographed copy of the test was given to each pupil. The time allowance for each test was one minute. In the sixth grade the four tests were given in immediate sequence. In the seventh and eighth grades the first two tests were given in immediate sequence and two weeks later Tests III and IV were given in immediate sequence.

In order to provide a check upon the data secured by the first giving of the tests, Test I was given about five months later to the pupils of the sixth grade on three successive weeks. The tests were given without previous knowledge by either the teacher or the pupils. At the same time Test II was given in the same way to the seventh-grade pupils and Test III to the eighth-grade pupils.

A pupil's performance depends upon several factors of which his ability is one. His performance is influenced by his physical condition, his mental and emotional status, the physical condition of the room, and particularly the way in which the tests are presented to him by the examiner. Thus, in order to be able to infer from the performances of a pupil whether the ability which functions in two different situations is a single general ability or two specific abilities, it is necessary to have the other factors which affect his performance as nearly constant as possible. In this investigation the same examiner gave the tests, and care was taken to have the other

[1] The writer is indebted to Mr. Harry McGuire, now superintendent of schools at Kiowa, Kansas, for giving the tests and making the calculations.

factors as constant as possible. Thus if the individual pupils made approximately the same relative scores on each of the tests, the evidence will indicate that the same ability functioned in all tests. On the other hand, if there are large differences in the two sets of scores, there will be evidence that the ability which functioned in one test was not the same ability that functioned in the other test. In order to show the relation between scores of the several tests,

TABLE I

SEVENTH-GRADE ATTEMPTS, DECIMAL TESTS I AND III

																			Test III	Frq.
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	.....
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	.....
	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	16	2
	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	15	1
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	.....
	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	13	1
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	.....
	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	11	3
	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	10	1
	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	9	1
	1	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	8	3
	..	1	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	7	3
	..	..	..	1	..	..	..	1	..	..	..	..	..	1	..	..	..	..	6	3
	1	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	5	3
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	.....
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	.....
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	.....
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	.....
	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	.....
Test I.....	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	.....
Frq.....	3	2	..	1	2	1	3	1	..	1	2	1	2	2	..	..	..	..	.....	.....

they were paired in every possible way for each group of pupils and the scores for each pair of tests were tabulated for both the number of examples attempted and the number right, as shown in Table I. Thus Table I shows the number of examples attempted by twenty-one seventh-grade pupils in Tests I and III. The scale at the right of the table is for Test III and the scale at the bottom is for Test I. The table is read as follows: Two pupils attempted sixteen examples on Test III; one of these pupils attempted seventeen examples on Test I, and the other only twelve examples. One pupil attempted fifteen examples on Test III and only nine on Test I. One pupil

attempted thirteen on Test III and thirteen on Test I. Three pupils attempted eleven examples on Test III. Their scores on Test I were 18, 6, and 5.

In order to summarize the facts shown in the thirty-six tabulations of the type shown in Table I, the coefficient of correlation was calculated by the Pearson formula. The coefficient of correlation

TABLE II

COEFFICIENTS OF CORRELATION FOR ATTEMPTS

	Grade VI 34 Pupils	Grade VII 22 Pupils	Grade VIII 22 Pupils
Test I with Test II	.41	.27	.48
Test I with Test III	.55	.07	.06
Test I with Test IV	.31	.15	.15
Test II with Test III	.44	.16	.40
Test II with Test IV	.39	.46	.45
Test III with Test IV	.58	.38	.68
Average	.45	.25	.37

TABLE III

COEFFICIENTS OF CORRELATION FOR RIGHTS

	Grade VI 34 Pupils	Grade VII 22 Pupils	Grade VIII 22 Pupils
Test I with Test II	.06	−.06	.44
Test I with Test III	.39	.37	.42
Test I with Test IV	.14	.29	.36
Test II with Test III	.66	.54	.58
Test II with Test IV	.47	.66	.80
Test III with Test IV	.52	.64	.68
Average	.37	.41	.55

necessarily represents a broad generalization and for this reason conceals the particular facts, but it does make possible a general bird's-eye view of a large group of facts of this sort. The coefficients of correlation are given in Tables II and III.[1] For each group of pupils the coefficients of correlation have been averaged. These averages have no particular significance except that they assist in

[1] The coefficients of correlation have not been corrected and the P.E. is not given. These were calculated for several of the coefficients and were found to be relatively small.

securing a general view of the several coefficients contained in the tables.

With one exception the coefficients are all positive and in many cases are large enough to indicate a reasonably high degree of positive high correlation. A fair degree of positive correlation should be expected even if two separate and distinct abilities are required for examples of different types, because pupils may possess both abilities in the same degree; in fact, we must expect this to be true in a large number of cases because the training has been general and not directed upon any one type of examples included in this test to the exclusion of other types. On the other hand, it must be kept in mind that any variation in the several factors upon which the performances of the pupil depend will produce variation in the scores and hence tend to lower the degree of correlation.

Bearing in mind these two facts, we should not expect a coefficient of correlation approaching 1.00 and likewise we should not expect negative coefficients or coefficients very close to zero. The significance of the variability of the scores shown in the tabulation tables, of which Table I is an example, and also the significance of the generalized data given in Tables II and III can only be interpreted by comparison with the similar data which was obtained by repeating the tests on three successive weeks. The scores thus obtained were tabulated in the same way and the coefficients of correlation are given in Tables IV and V. By giving the tests a week apart, it is probable that the degree of uniformity of the factors which governed the performances of the pupils was less than in the first giving of the tests. If this was the case, the tendency would be to reduce the coefficient of correlation in Tables IV and V.

Comparing Tables II and III with Tables IV and V we find that in general the coefficients of correlation in Tables II and III are much lower than the coefficients of correlation in Tables IV and V. The difference is probably sufficiently great to indicate that for these pupils, at least, placing the decimal point was accomplished by means of specific abilities. This suggestion is emphasized by a study of the detail facts given in the tabulations of the scores. A few pupils made relatively the same scores on all the tests. There were a few cases of extreme variation which probably could be

explained by some unknown variation in the factors attending the giving of the tests. The fact that some pupils made relatively the same score upon two different tests does not constitute positive evidence that the examples were done by means of a general ability. It may be that it simply happened that these pupils possessed the specific abilities required in the same degree.

The writer gave these tests to a group of adults and afterward secured their introspection of their processes in placing the decimal

TABLE IV

COEFFICIENTS OF CORRELATION FOR ATTEMPTS

	Grade VI Test I	Grade VII Test II	Grade VIII Test III
First record with second	.75	.71	.35
First record with third	.55	.68	.34
Second record with third	.86	.80	.80
Average	.72	.73	.49

TABLE V

COEFFICIENTS OF CORRELATION FOR RIGHTS

	Grade VI Test I	Grade VII Test II	Grade VIII Test III
First record with second	.72	.62	.55
First record with third	.48	.58	.72
Second record with third	.84	.66	.86
Average	.66	.62	.71

point in each type of example. These introspections showed very clearly that a variety of devices were used and that the same person used different devices in placing the decimal point in different types of examples.

The number of pupils involved in this study is too small to warrant even tentative conclusions if other studies had not been made with other types of examples. In view of the results of other studies, one is probably justified in concluding that the decimal point is not placed in quotients by means of a general rule or general ability, but by means of several specific abilities, or at least that this is the case with a number of pupils.

Assuming the possibility of this conclusion, a little consideration will reveal that there are a large number of types of examples in division of decimal fractions. Even within a range of relatively simple examples it is possible to enumerate a considerable number of types. If each type of example requires a specific ability, it is clearly very important that this field of subject-matter be carefully analyzed to determine the fundamental types of examples. It is also obvious that it is extremely important that each teacher be aware of the several types of examples which exist, and make certain that each pupil is trained in handling each type of example. Without a reliable analysis of this field of subject-matter and without the teacher being aware of the fundamental types of examples, her instruction cannot fail to be largely a matter of chance.

Tests should be given for the purpose of securing information which can be used in making the instruction more effective. Tests which are not based upon analysis of the field of subject-matter cannot be effective instruments for educational diagnosis. Their use can have little value except to provide a very general measure of the abilities of the pupils. On the other hand, tests based on the scientific analysis of abilities can provide a very valuable diagnosis which can be very helpful to the teacher in formulating her plans for instruction. If a pupil is shown to be unable to do with satisfactory speed and accuracy examples of a given type, the teacher may know that this defect must be remedied by providing some special training for this pupil. For this reason teachers and superintendents should exercise judgment in selecting tests, and should choose those which will be most helpful to teachers in increasing the effectiveness of their instruction.

THE DERIVATION OF THE MONTESSORI DIDACTIC APPARATUS[1]

MATTIE CRUMPTON HARDY
Graduate Student, Department of Psychology, University of Chicago

"The didactic apparatus used by Montessori is not a set of mere separate toys. Neither are these materials used simply for the purpose of sense training. In the fullest sense they are the instruments of the psychological laboratory. The method of Dr. Montessori is the method of the experimental psychologist." Alongside of this quotation from an article of Carl Byoirs,[2] president of the House of Childhood in New York, we give the following from William Boyd's *From Locke to Montessori*:[3] "Unlike Pestalozzi, she has not succeeded in evolving a coherent and unified scheme of thought out of her experimentation. Her so-called method is not really one method, but an aggregation of methods only loosely related in her own mind and capable of being employed in detachments from each other without any serious loss of virtue to any one of them."

The Montessori method as one unit or a composite of many units is interesting to the educator as a system of infant education, but to the psychologist, in addition to the psychological principles underlying it as a pedagogical problem, its outstanding features are its derivation, its stages of progress, and the method of procedure in the experimentation and final evolution. The purpose of this paper is not to deal with the problem of complexities of method, but to find the materials with which Dr. Montessori began her experiments, the sources of such apparatus, and to see wherein changes have been made from the original.

[1] Psychopathic Laboratory, University of Chicago. Communicated by H. C. Stevens.

[2] "Presentation on Montessori Material," *National Education Association Address and Proceedings* (1912), p. 615.

[3] Page 138.

Maria Montessori's interest in the education of children began with her appointment as assistant physician at the psychiatric clinic in Rome. She was at that time doing special work along the line of children's diseases. Her trips to the insane asylum to secure patients for the clinic gave her a knowledge of the methods then prevalent for treating mental deficiency. That she might the better solve the problem of handling such cases at the clinic, she began a study of Séguin's and Itard's works. As a result she was convinced that mental deficiency in children called for education even more than for medical treatment. Her advocacy of this view at an important education congress in Turin in 1898 brought her an invitation from the minister of education to deliver a course of lectures to the teachers of Rome on the observation and training of defective children. These lectures led to the establishment of the State Orthophrenic School for the care of the feeble-minded. This school Montessori conducted herself, and by her personal efforts hopelessly retarded children from the elementary grades were allowed admission. The shift of her interest from the education of the feeble-minded to the problems of ordinary education was brought about by the striking success of her experiment with the defectives. She says, "While everyone was admiring the progress of my idiots, I was searching for the reason which could keep the happy, healthy children of the common schools on so low a plane that they could be equaled in tests of intelligence by my unfortunate pupils."[1] Believing that the same fundamental principles were involved in the education of the normal as those which she employed in her teaching of the defective, she gave up her work with the feeble-minded, and enrolled as a student of experimental psychology in the University of Rome. In 1907 the opportunity was given her for testing the validity of her set of didactic apparatus, the result of some years of psychological experimentation. Such changes as have been made in the apparatus since that time have been only minor adaptations.

Since those conversant with the problems of modern education are familiar with the Montessori apparatus, a description is here unnecessary, but for the sake of clearness it may be well to mention the kinds of materials she uses. The set of didactic apparatus

[1] *The Montessori Method*, p. 39.

includes dressing-frames for the development of co-ordinated movements of the fingers, solid geometric insets consisting of a series of cylinders of varying proportions; a series of blocks, color boxes, plane geometric insets, cylindrical sound boxes, and alphabet boxes.

The first questions to be answered in a study of Dr. Montessori's apparatus are: With what materials did she begin her experiments? and, What method did she pursue? The second question must remain unanswered so far as her experiments in the laboratory are concerned. As stated before, her first work in the educational field began in 1898 at the Orthophrenic School. Her material and the presentation of such during those two years were a careful application of Séguin's physiological method. As his treatment of scholastic subjects was very inadequate and unsatisfactory, Montessori attempted a new and original method of teaching reading and writing. Just what her materials were at this stage is very indefinite, but it is highly probable that the cut-up alphabet formed the basis for all future developments of this set. At this point began the psychological experimentation, which can be followed only by a comparison of the completed set of materials with the apparatus used in the beginning.

Since she had had previous experience with Séguin's materials it is a logical assumption that they formed the starting-point of her experiments. It will be interesting to see what traces they have left upon her finished handiwork.

Among the first educational gymnastics used in the Montessori method are the finger exercises with the dressing-frames. In Séguin's *Idiocy: Treatment by Physiological Methods* the hand is trained to precision by the finger gymnastics of buttoning, unbuttoning, and lacing and unlacing.[1] Montessori has added to these hooking, snapping, and tying. Her frames, as we know them, are attractive in colors, durable in fabric, and easily manipulated by the children, but they are based upon Séguinian principles and bear no special individual stamp.

The solid geometric insets consist of three series of wooden cylinders varying in height and diameter and fitting into correspond-

[1] Columbia ed., p. 87.

ing holes. Séguin's nail board was a board pierced with holes fitted with nails of the same dimensions. Here Dr. Montessori's experimental results show to good advantage. Séguin's descriptions of the nail board are limited and throw little light on the exact nature of the apparatus. It seems, however, that we are safe in assuming that his nails were either all alike or that they varied in only one dimension. The reason for this assumption is twofold: (1) he used only one board, and (2) the purpose of the exercise was the development of the hand. In Montessori's set the exercises are for differentiations in visual perception and are a preparation for the more difficult problems of fine adjustments.

The three series of blocks are all based upon the general principle of from large to small which is a special feature of several of Séguin's block exercises. The first of the series is the tower, a set of ten wooden cubes decreasing regularly in size. The play with these blocks consists in the superimposing of one block upon another from the largest to the smallest. In one of Séguin's exercises he states in very similar words the same purpose of his block work. The basic form, however, of this material, the cube, is a Froebelian idea and not Séguinian. The second of this series, the broad stair, is a set of ten rectangular wooden blocks in graduated dimensions of height and width, length remaining constant. The broad stair is the familiar Froebelian fourth gift of the kindergarten, usually called the "bricks," varying in the aforesaid dimensions. In these two sets of the series the Montessori apparatus differs from the Séguinian and the Froebelian in the regular decrease in size and in the construction arrangement planned; e.g., the doing of one and only one thing with each set.

Number 3 in the series, the long stair marked off into decimeters, is an exact duplicate of Séguin's "French meter"[1] for the appreciation of the size of bodies. The alternating of the colors blue and red in the divisions on each rod is Montessori's invention. The "French meter" set consisted of ten rods varying from one meter in length to one decimeter, each rod being carefully marked off into exact units. Séguin also worked out this same principle with yards and inches.

[1] Séguin, *Idiocy: Treatment by Physiological Methods*, p. 117.

In the teaching of color Séguin utilized cards, ribbons, marbles, and the like in similar colors, having the child assort them in pairs. Froebel used worsted balls of the six primary colors. Montessori has used Séguin's suggestion of conveying through the material only the property of color,[1] and also has employed his method of having the colors assorted in pairs. Here the similarities cease, for Montessori has elaborated this series to a very fine point of color discriminations, and in that she stands alone.

The materials used for teaching rough and smooth are original in arrangement only. Séguin in training the sense of touch had the child pass his hand over the bodies of various degrees of polish or resistance, such as grades of wood, marble slabs,[2] etc. Montessori's material is composed of strips of sandpaper, ranging from very coarse to very fine.

The fabrics or "stuffs" are pieces of velvet, silk, linen, cotton, and wool for gaining a knowledge of quality through the tactile sense. This set of the apparatus is identical with that of Séguin used for the same purpose.[3] We find no new value given to the apparatus, only a refinement of the material itself.

The plane geometric insets are based upon the same formal principles that characterized the drawing of Pestalozzi, Froebel, and Séguin. Froebel's seventh kindergarten gift is a series of wooden geometric figures which are to be combined into forms for drawing. One of Séguin's gymnastic exercises for the hand was the adaptation of geometric figures to their respective hollow forms.[4] These were also used in connection with painted geometric figures on cards for drawing purposes. Montessori has employed all of these factors in her work with this same apparatus.

In Séguin's method of teaching reading and writing, two alphabets were required, one composed of metal and the other of painted letters. In the Montessori system there are also two alphabets, one consisting of sandpaper letters and the other of colored paper letters. Dr. Montessori, however, has so far surpassed previous methods of teaching reading and writing, especially the latter, that

[1] Séguin, *Idiocy: Treatment by Psychological Method*, p. 115.

[2] *Ibid.*, p. 97.

[3] *Ibid.*, p. 98.

[4] *Ibid.*, p. 87.

this part of her work stands out as the most characteristic and original phase of the didactic apparatus.

TABLE I

Montessori	Séguin	Froebel
1. Dressing-frames	Materials for buttoning and lacing	.....
Purpose: finger gymnastics	Purpose: finger gymnastics	
2. Solid geometric insets	Nail board	.....
Purpose: Visual perceptions	Purpose: to exercise the hand to precision	
3. Series of blocks		
Purpose: auto-education	.....	Purpose: construction
(1) Tower cubes		(1) III. Kindergarten gift, the cubes
(2) Broad stair—rectangular prisms	.....	(2) IV. Kindergarten gift, the oblongs or "bricks"
(3) Long stair-rods	"French meter"	
	Purpose: appreciation of size	.....
4. Sandpaper strips for rough and smooth	Bodies of various degrees of polish and resistance	
Purpose: development of tactile sense	Purpose: development of tactile sense	.....
5. Stuffs—fabrics	Stuffs	
Purpose: quality through touch	Purpose: quality through touch	.....
6. Color boxes	Assorting of colored cards in pairs	.....
Purpose: visual discriminations	Purpose: visual discriminations	.....
7. Plane geometric insets	Plane geometric figures fitted to hollow receptacles	Geometric tablets
Purpose: adjustment of fine movements and a knowledge of form	Purpose: development of the hands and fingers	Purpose: knowledge of form
8. Cylindrical sound boxes	.....	.....
Purpose: discrimination of auditory perceptions		
9. Alphabet boxes — sandpaper and cardboard	Metal and painted alphabets	.....
Purpose: teaching reading and writing	Purpose: teaching reading and writing	

The sound boxes belong exclusively to Montessori, so far as we can discover. Séguin taught the discrimination of noises to defective children separately, and his suggestions are few and vague. Itard recommended the gradation of sounds of the bell and the drum for the training of auditory perceptions. But the

boxes containing different kinds of substances for the differentiations of noises are essentially a Montessorian device.

As a summary of the preceding facts we give Table I, showing the relation of the apparatus used by Montessori, Séguin, and Froebel.

From the foregoing correlations we may draw the following conclusions:

1. Every part of the Montessori apparatus, with one exception—the sound boxes—has been derived directly from the Séguinian didactic materials used by Séguin in the education of idiots.

2. The majority of the apparatus has only been refined and made more attractive and more durable; it has not been changed in form.

3. Those parts which seem to differ from the original in form have merely been elaborated and made more definite and practical; therefore they have not been evolved into new and characteristic materials.

4. The purposes for which the apparatus was planned by the originator, Séguin, and those for which Montessori uses the materials are identical in the majority of steps.

5. The sound boxes for auditory discriminations, the color boxes for fine distinctions of color differentiations, and the evolution of the set of materials for the effective teaching of writing are the principal materials which show the result of independent psychological experimentation.

6. The Montessori didactic apparatus is neither original in form nor in application, though the systematizing of the methods of presentation is due to Dr. Montessori alone.

EDUCATIONAL WRITINGS

I. HOW TO KEEP IN TOUCH WITH THE QUANTITATIVE LITERATURE OF EDUCATION[1]

H. O. RUGG
University of Chicago

The outstanding characteristic of education as it has developed in the last fifteen years is found to be a general acceptance of the quantitative method by school men. As education has become more and more a scientific profession, it has been recognized that the success of the school man is determined most largely by the degree to which he keeps in touch with the quantitative tools. To the school administrator and teacher the most necessary tools of the day, aside from classroom and school experience, are acquired by keeping up to date with the quantitative literature in education.

This quantitative literature is multiplying more rapidly than the teacher or superintendent interested in the general field of education can hope to keep in touch with it. We recognize clearly today that we must select our field of interest, and we find that, even when doing so, it requires unusual efforts to

[1] The article which we print in this issue—"How to Keep in Touch with the Quantitative Literature of Education"—indicates the general method by which the *School Review* and the *Elementary School Journal* will try to keep school teachers and administrators in touch with the rapidly multiplying literature. This is one of the principal functions of an educational journal. Our "Department of Educational Writings" has organized its facilities so as, in each issue, to comment upon or give notice to all educational publications (except magazine articles) issued *during the preceding month.* Section I of "Educational Writings" contains a descriptive and critical article which summarizes the literature pertaining to a particular field of interest and which has been published within the preceding year. In the *School Review* these articles will be organized principally by high-school "subjects"—mathematics, English, history, science, etc. In the *Elementary School Journal,* in addition to the articles on the literature of teaching the elementary subjects, there are summaries of the literature on standard tests, school finance, school marks, the junior high school, etc. The article covering a particular field will appear once each year, thus keeping the reader in touch with every publication that has come out since the previous summary. Section II contains each month descriptive evaluations of the most important six or eight books and monographs issued *during the previous month.* Section III gives brief descriptive statements of several minor publications of interest to public-school people. Section IV lists, with succinct annotations, all other publications received. The appeal will be primarily to *public-school teachers, principals, and superintendents.*

keep acquainted with what is coming out in school report, magazine, monograph, and book.

Agencies which are equipped to acquaint the school man with this rapidly multiplying literature must take upon themselves more and more actively the carrying out of this function. It is the purpose of the following discussions to put into the hands of school people a systematic method of keeping in touch with the quantitative literature of the day. It may be said at this point that the review editors of these journals will attempt to keep this particular device up to date from year to year and thus place at the disposal of the school man an ever-ready tool to help him in staying abreast of the times.

A. THE NECESSITY FOR WELL-SELECTED BIBLIOGRAPHIC MATERIAL

The student who wishes to attack the solution of any new problem in education faces first the task of mastering what has been done by others in the same field. His first need is that of a well-selected bibliography in his particular field. Most bibliographies covering the general field of education, or even of its more important subdivisions, contain material which has not in all cases been properly evaluated. The student wishes to know, out of the hundreds of studies which have been made in his field, which ones will be most helpful to him in starting upon his problem. One of the characteristics of the recent movement in education is that school men have more and more turned to this task of making systematic evaluations of bibliographic material and have reported these in connection with their books or original studies in the particular fields. The tendency recently has been to give the reader a selected and evaluated bibliography. We therefore print first, in this review, a list of books each of which gives the reader for the field in question a well-annotated and clearly organized bibliography.[1]

A LIST OF PUBLICATIONS ON EDUCATION, EACH OF WHICH CONTAINS SELECTED BIBLIOGRAPHIC MATERIAL

I. School Administration

A. General Field

1. Cubberley, E. P. *Public School Administration.* Boston and Chicago: Houghton Mifflin Co., 1916.
2. Rugg, H. O. *Statistical Methods Applied to Education.* Boston and Chicago: Houghton Mifflin Co., 1917.
3. Strayer, G. D., and Thorndike, E. L. *Educational Administration; Quantitative Studies.* New York: Macmillan, 1913.

[1] It should be pointed out that some of these bibliographies contain references to material of a non-quantitative nature. They are included in this review to bring all phases of educational literature within reach of the student of education.

B. Special Phases of Administration

1. MINIMAL ESSENTIALS IN VARIOUS SUBJECTS. National Society for the Study of Education, *Fourteenth Yearbook*, Part I (1915), *Sixteenth Yearbook*, Part I (1917), *Seventeenth Yearbook* (in preparation, issued February, 1918). Bloomington, Ill.: Public School Publishing Co.
2. THE CURRICULUM. BOBBITT, J. F., "Summary of the Literature in Scientific Method in the Field of Curriculum-Making," *Elementary School Journal*, XVIII (November, 1917), 219.
3. JUNIOR HIGH SCHOOL. DOUGLASS, A. A., Part III of the *Fifteenth Yearbook*, National Society for the Study of Education. Bloomington, Ill.: Public School Publishing Co., 1916.
4. SCHOOL SURVEYS: CITY, STATE, INDUSTRIAL, AND RURAL. RUGG, H. O., *Statistical Methods Applied to Education*. Boston and Chicago: Houghton Mifflin Co., 1917.
5. SCHOOL COSTS AND BUSINESS MANAGEMENT. RUGG, H. O., "Summary of the Literature of Public School Costs and Business Management," *Elementary School Journal*, XVII (April, 1917), 591.
6. PROMOTION PLANS. HOLMES, W. H., *School Organization and the Individual Child*. Worcester, Mass.: Davis Press, 1912.
7. TEACHERS' MARKING SYSTEMS. RUGG, H. O., "Teachers' Marks and Marking Systems," *Educational Administration and Supervision*, February, 1915.
8. EDUCATIONAL MEASUREMENT AND STANDARD TESTS.
   (1) GRAY, W. S., "Descriptive List of Standard Tests," *Elementary School Journal*, XVIII (September, 1917), 56.
   (2) HOLMES, H. W., and others, *Descriptive Bibliography of Measurement in Elementary Subjects* (Harvard Bulletins in Education, No. 5). Cambridge, Mass.: Harvard University, 1917.
9. VOCATIONAL GUIDANCE. BREWER, J. M., and KELLY, R. W. *Selected Critical Bibliography of Vocational Guidance* (Harvard Bulletins in Education, No. 4). Cambridge, Mass.: Harvard University, February, 1917.
10. SECONDARY EDUCATION.
    (1) MONROE, PAUL (Editor), *Principles of Secondary Education*. New York: Macmillan, 1914.
    (2) SNEDDEN, D. S., *Problems of Secondary Education*. Boston, New York: Houghton Mifflin Co., 1917.
11. COMMUNITY-CENTER ACTIVITIES. PERRY, C. A., *Community Center Activities*. New York: Russell Sage Foundation, 1916.
12. SUPERVISED STUDY. HALL-QUEST, A. L., *Supervised Study*. New York: Macmillan, 1916.
13. SCHOOL HYGIENE. RAPEER, L. W., *Educational Hygiene*. New York: Scribner, 1915.

II. TEACHING THE VARIOUS SUBJECTS

1. TEACHING ELEMENTARY SUBJECTS. RAPEER, L. W., *Teaching the Elementary-School Subjects*. New York: Scribner, 1917.
2. ENGLISH. HOSIC, J. F. (Compiler), *Reorganization of English in Secondary Schools* (Bulletin 2, 1917). Washington: U.S. Bureau of Education.
3. MATHEMATICS. SMITH, D. E., *Teaching of Mathematics*. Boston: Ginn & Co.
4. SCIENCE. TWISS, G. R., *Textbook in the Principles of Science Teaching*. New York: Macmillan, 1917.

5. HISTORY, CIVICS, AND GOVERNMENT.
   (1) JOHNSON, HENRY, *Teaching of History in Elementary and Secondary Schools.* New York: Macmillan, 1915.
   (2) WAYLAND, J. W., *How to Teach American History.* New York: Macmillan, 1914.
   (3) AMERICAN POLITICAL SCIENCE ASSOCIATION, COMMITTEE ON INSTRUCTION, *Teaching of Government.* New York: Macmillan, 1916.

III. EDUCATIONAL PSYCHOLOGY

1. GENERAL FIELD. Very complete summaries, critical comment, and bibliographies of general field in: THORNDIKE, E. L., *Educational Psychology* (3 vols.): Vol. I, *Original Nature of Men;* Vol. II, *Psychology of Learning* (covers field of practice curve and transfer of training); Vol. III, *Mental Work, Fatigue, and Individual Differences.* New York: Teachers College, Columbia University, 1913–14.
2. TRANSFER OF TRAINING. Complete tabular and descriptive summary of studies to 1914 in: RUGG, H. O., *Experimental Determination of Mental Discipline in School Studies.* Baltimore: Warwick & York, 1916.
3. MENTAL TESTS.
   (1) TERMAN, L. M., *The Measurement of Intelligence.* Boston, New York: Houghton Mifflin Co., 1916.
   (2) WHIPPLE, G. M., *Manual of Physical and Mental Tests* (2 vols.). Baltimore: Warwick & York, 1914.

B. SOURCES OF THE CURRENT QUANTITATIVE LITERATURE IN EDUCATION

Knowing the sources to which to turn for bibliographic material, the school man also needs to be in touch with the *permanently established agencies* which are constantly issuing quantitative literature. For those administrative officers and school teachers who have not already at hand a list of these sources, we enumerate the most important of them next. In each case bureaus or other types of educational agencies have been included if it seems likely that the school man by keeping in touch with them will be able to secure from time to time material of a sort helpful to his school practice. The idea underlying this next phase of our review is that there are certain more important bureaus, foundations, departments, etc., which are continually investigating scientifically specific aspects of school practice, and which are reporting the results to workers interested in the various problems. The list follows:

I. BUREAUS AND FOUNDATIONS OF NATIONAL SCOPE

1. **U.S. Bureau of Education,** Washington, D.C. Four types of publications: (*a*) *Annual Report* of the Commissioner of Education comprises two volumes. Vol. I is made up of descriptive reports on current movements in education, recent educational experiments and innovations, descriptive summaries of conditions both in this country and abroad; Vol. II comprises detailed statistics for all cities and towns above 5,000 population which have reported to the Bureau during the past

year. Statistics are for all phases of finance (revenues and expenditures, unit costs, etc.), attendance statistics, and statistics on the teaching staff. (*b*) *Bulletins* of the Bureau of Education. Each year the Bureau publishes approximately fifty bulletins written by collaborating specialists of the Bureau on particular problems of education. In the past some most important contributions to educational administration have been made through these bulletins. Lists can be found on the back cover of each bulletin. Under war conditions charges are made for each of these bulletins to those who are not on the selected mailing list. (*c*) *News Letters* of the Bureau of Education. Mimeographed material on particular aspects of education received intermittently by those on the mailing list.

2. **Russell Sage Foundation,** 130 E. 22d Street, New York City. Division of Education, Leonard P. Ayres, director. Has published since 1908 many valuable monographs and bulletins on special phases of educational administration. Send for bulletin announcing the activities and publications of the bureau. Publications sold at cost, in the main from 5 cents to 25 cents. A few larger monographs have been published.
3. **Carnegie Foundation for the Advancement of Teaching,** 576 Fifth Avenue, New York. 1916. (*a*) *Annual Reports* (eleventh annual report of the president and of the treasurer, October, 1916) containing many reports of detailed investigations on teachers' pensions for colleges and public schools; also summaries of studies made by the division of educational inquiry. (*b*) *Bulletins*. Ten separate bulletins, subjects of which can be found in recent annual reports. Studies of state and national conditions have been and are being made of medical education, law education, engineering education, state surveys of education in Vermont, and normal schools in Missouri. Reports on investigations of teacher-training courses.
4. **General Education Board,** 61 Broadway, New York, N.Y. (*a*) *Reports*. Four reports, the first for the years 1902–14, the second for 1914–15, the third for 1915–16, the fourth for 1916–17 (in preparation). (*b*) *Special studies in education*. Four special reports, three of which are in preparation. (*c*) *Occasional papers*. Seven short papers of a philosophic nature.

II. State Departments of Education Which Issue Monographic Material in Education

1. **New Hampshire** (Concord): Bureau of Research. Bulletins issued on educational measurement. One available by H. A. Brown on reading. Others in press on Latin, one on typewriting, and one on the languages.
2. **New Jersey** (Trenton): Address Commissioner C. N. Kendall. Monographs on the teaching of various subjects.
3. **Massachusetts** (Boston): Commissioner Payson Smith.
4. **New York** (Albany): Commissioner J. H. Finley, Deputy Commissioner. Thomas E. Finegan. Bulletins on various phases of school practice. Address Hiram C. Case for excellent material on school costs and school accounting. Accounting forms which would be helpful to superintendents of schools in small as well as in large cities published by C. F. Williams & Son, Albany, N.Y.
5. **Wisconsin** (Madison): Superintendent C. P. Cary; Dr. W. W. Theisen, director of educational measurements. Bulletins issued monthly; *Educational News Bulletin*.

III. Bulletins on Education Issued by State Universities

1. **Indiana** (Bloomington): Annual bulletin on educational measurement (50 cents). Bureau of Co-operative Research.
2. **Illinois** (Urbana): (1) Bulletins issued by School of Education (address director of school); (2) annual proceedings of University of Illinois High School Conference now contain good material. H. A. Hollister, high-school visitor.
3. **Kansas** (Lawrence): Dean F. H. Kelly.
4. **Texas** (Austin): University bulletins issued by Extension Division. Some administrative and pedagogical material. Mailing lists.
5. **Wisconsin** (Madison): Series of high-school manuals and other bulletins.

IV. Departments of Educational Research in City School Systems

City	Director	Address
Baltimore, Md.	Edwin Hebden	714 Euclid Ave., Roland Park, Branch P.O., Baltimore, Md.
Boston, Mass.	Frank W. Ballou A. W. Kallom	14 Mason St., Boston, Mass.

Bulletins distributed by secretary of School Committee in response to request, 7 cents each. Twelve bulletins published covering the design and use of standard tests in arithmetic, spelling, geography, English, penmanship, reading; also reports on school administration.

Buffalo, N.Y.	William A. Mackey	Department of Public Instruction, 1401 N.Y. Telephone Bldg., Buffalo, N.Y.
Chicago	Samuel B. Allison	Office, Superintendent of Schools, Chicago, Ill.

Department just organized—no material available.

Cleveland, Ohio	C. W. Sutton	Office, Superintendent of Schools, Cleveland, Ohio

Planning to publish bulletins; conducts courses in educational measurements at city training school.

Columbus, Ohio	.....	Office, Superintendent of Schools, Columbus, Ohio
Detroit, Mich.	S. A. Courtis	82 Eliot St., Detroit, Mich.

Write S. A. Courtis for 1917–18 announcement of standard tests and bulletins handled by "Bureau of Co-operative Research."

Hibbing, Minn.	Wylie W. Richardson	Board of Education, Hibbing, Minn.
Kansas City, Mo.	George Melcher	Library Bldg., Kansas City, Mo.

Bulletins available on the use of standard tests in various subjects.

Los Angeles, Cal.	Robert H. Lane	Office, Superintendent of Schools, Los Angeles, Cal.

Division of research organized May, 1917. Will publish first yearbook June, 1918. Have issued two bulletins on standard tests.

Louisville, Ky.	Henrietta V. Race	Board of Education, Louisville, Ky.

City	Director	Address
New York, N.Y.	E. A. Nifenecker	500 Park Ave., New York, N.Y.

Fifteen bulletins published 1914–17. Prices vary from 10 cents to 20 cents. List of publications on application.

Oakland, Cal.	Virgil E. Dickson	Board of Education, Oakland, Cal.

Bulletins published intermittently; one on spelling and another on *Information Service as Developed in the Oakland Schools.*

Omaha, Neb.	Homer W. Anderson	Omaha, Neb.
Rochester, N.Y.	J. P. O'Hern	Office, Superintendent of Schools, Rochester, N.Y.
Schenectady, N.Y.	H. L. Davenport	108 Union St., Schenectady, N.Y.

Publications included in superintendent's annual report. No bulletins issued.

Topeka, Kan.	Ira J. Bright	620 Tyler St., Topeka, Kan.

Publication included in superintendent's annual report.

V. BUREAUS OF RESEARCH IN UNIVERSITIES, NORMAL SCHOOLS, BOARDS OF EDUCATION, FOUNDATIONS, ETC.

Institution	Director	Address
Arkansas, University of.	J. R. Jewell	Fayetteville, Ark.
Cleveland Foundation.	Allen T. Burns	Cleveland, Ohio
General Education Board.	Abraham Flexner	61 Broadway, New York, N.Y.
Indiana University.	Vacant at present	Bloomington, Ind.

Annual spring conference on educational measurements. Proceedings published as annual report in spring of each year. Three or four such reports available. Price 50 cents each. 1914 report out of print.

Iowa, University of.	E. J. Ashbaugh	Iowa City, Iowa

Annual conference on supervision held in December. No report published. Special bulletins published intermittently by Extension Division. Several already available on use of standard tests.

Kansas, University of.	F. J. Kelly	Lawrence, Kan.

Will publish bulletins intermittently. None is yet available.

Kansas State Normal School.	Walter S. Monroe	Emporia, Kan.

Publish annual reports in bulletin form and supplementary bulletins intermittently on educational measurements.

Minnesota, University of.	M. E. Haggerty	Minneapolis, Minn.
Nebraska, University of.	Charles Fordyce	Lincoln, Neb.
New York State Department of Education.	William A. Averill	Albany, N.Y.
Oklahoma, University of.	W. W. Phelan	Norman, Okla.

One report published. Plan to publish bulletins.

Russell Sage Foundation.	Leonard P. Ayres	New York, N.Y.
South Dakota, University of.	W. Franklin Jones	Vermilion, S.D.

No publications as yet.

Institution	Director	Address
South Dakota Northern Normal and Industrial School.	Willis E. Johnson	Aberdeen, S.D.
Bureau of Educational Research. Bulletin 11, No. 3 the only one available. Plan to publish others.		
Wisconsin State Board of Education.	B. R. Buckingham	Madison, Wis.

VI. "Experimental Schools"

A list of 27 Experimental Schools and a complete list of references to such schools are given in Bulletin No. 3 of: The Bureau of Educational Experiments, 70 Fifth Ave., New York, N.Y. This bureau is made up of a group of experimenters in education, organized to support educational experimentation and to initiate new experiments; to collect and make available for public use information about the whole field of experiments in education, and to hasten introduction of newly acquired methods through actual teaching experiments. Five bulletins have been issued. Jean Lee Hunt, *secretary, Department of Information.*

VII. Important Monographic Series and Yearbooks Which Report the More Important Quantitative Studies in Education

1. *Columbia University, Teachers College, Contributions to Education.* Series includes 82 volumes to date. Ten volumes on an average are published each year. Complete catalogue sent on request. Bureau of Publications, Teachers College, New York City. Bulletin issued *Catalog of Publications of Teachers College,* Teachers College Bulletin, Eighth Series, No. 7, December 2, 1916. A series of 82 monographs containing reports of quantitative studies on elimination, retardation, school finance, costs, and buildings; the teaching staff; marking systems; scales and standard tests, etc. Most of the early quantitative studies in administration were in this series.
2. *University of Chicago Supplementary Educational Monographs.* Edited in conjunction with *School Review* and *Elementary School Journal.* Published by The University of Chicago Press. Price varies; $5.00 per volume (postage 50 cents extra). First volume will contain approximately 1,000 pages. Published intermittently, probably six to ten monographs per year. Scientific studies on learning in the various subjects; the use of standard tests; also quantitative material on school administration.
3. *Educational Psychology Monographs.* Edited by Guy M. Whipple. Published separately at varying prices. Warwick & York, Baltimore, Md. A list of more than thirty separate studies, chiefly in the field of educational psychology. Some material on mental tests and school administration.
4. *Harvard Bulletins in Education* (continuing Harvard-Newton bulletins). Harvard University Press, Cambridge, Mass. No. 5, September, 1917. No. 4 is first of new series devoted primarily to bibliographies on special fields and reports of scientific studies in the use of standard tests. Other administrative problems reported.
5. *Harvard Studies in Education.* Harvard University Press, Cambridge, Mass. Price varies with monograph. A few monographs already published, reporting investigations on the teaching staff and other problems in school administration.

6. *National Society for the Study of Education.* Yearbooks, sixteenth issued 1917. Public School Publishing Co., Bloomington, Ill. Over forty published. Price usually 75 cents and postage. List of titles, dates, and prices on paper-back cover of current copy. Sixteenth, Part I just issued. Ninety cents net. These yearbooks have in the past contained important studies on the certification of teachers, school supervision, industrial and agricultural education, school surveys, minimal essentials and measurement, rating of teachers, etc.
7. *School Efficiency Monographs.* World Book Co., Yonkers-on-Hudson, N.Y.; Chicago. Practical experiments and investigations in education published in this new series; e.g., Mahoney's *Standards in Education*, Reed's *Newsboy Service*, etc.

VIII. Educational Journals Which Report Quantitative Studies

1. *American School Board Journal.* Bruce Publishing Co., 354 Milwaukee St., Milwaukee, Wis. W. C. Bruce, editor. $2.00. Monthly. Vol. LV, No. 4, October, 1917 issue. Primarily a journal for superintendents and administrative officers; contains detailed material on school-board problems, school finance, school buildings; superintendency problems covered and many personal news notes on people active in the field; supervision of teachers, etc. No school board should be without it.
2. *Educational Administration and Supervision.* Warwick & York, Baltimore, Md. (Managing editor: ————————. $2.50. Monthly. Vol. III No. 7, September, 1917. Contains articles on administration, especially high-school administration, marking systems, grading and promotion, educational measurement, school inspection. Articles have been somewhat general. Only a small proportion contain quantitative material. Very little reference to school-board, school-finance, or school-building problems.
3. *Elementary School Journal.* The University of Chicago Press, Chicago, Ill. Edited by the Faculty of the School of Education, University of Chicago. C. H. Judd, chairman, Joint Editorial Committee. $1.50. Monthly, except July and August. Vol. XVIII, No. 2, October, 1917. Current fundamental movements in education are discussed each month. School administrators and teachers are kept in touch with all educational literature issued each month. Articles on teaching methods, important reorganizations of grades and subject-matter, standard tests and measurements, courses of study for the grades, articles of general administrative appeal as well as many of interest to elementary-school teachers.
4. *Journal of Educational Psychology.* Warwick & York, Baltimore, Md. J. C. Bell, managing editor, 1032A Sterling Place, Brooklyn, N.Y. $3.00 per year. Monthly, except July and August. Vol. VIII, No. 7, September, 1917. In the past has reported much quantitative material, but is devoted primarily to the field of laboratory and educational psychology. Articles appear at times on educational scales, standard tests, and other types of measurement of abilities or of school or teaching efficiency. Of more interest to the college teacher and student of educational psychology than to public-school people.
5. *School and Society.* Science Press. New York City, Substation 84. Lancaster, Pa., and Garrison, N.Y. J. McKeen Cattell, editor. $3.00 per year. Weekly. Vol. VI, No. 147, October 20, 1917. A general magazine appealing primarily to college and university teachers. Articles are very generally reprints of addresses

of a philosophic nature. Each issue contains one article on educational research and measurement. Students of the quantitative materials of education should keep in touch with these research articles. News notes relate primarily to the college field.

6. *School Review.* The University of Chicago Press, Chicago, Ill. Edited by the Faculty of the School of Education, University of Chicago. C. H. Judd, chairman, Joint Editorial Committee. $1.50. Monthly, except July and August. Vol. XXV, No. 8, October, 1917. Essentially a high-school magazine. Contains articles of interest to the teacher of particular subjects. Much standardizing and measurement material; courses of study; discussions of reorganizations of secondary education (junior high-school discussions); methods of teaching specific subjects; discussions of educational news and comment on current events in the general field of education. Department of reviews attempts to acquaint the reader with all phases of educational literature appearing each month.

IX. Important Textbook Series in Education

1. *Riverside Textbooks in Education.* Houghton Mifflin Co., Boston. Edited by Ellwood P. Cubberley.

   One of most important series now published; contains books on school administration, psychology of common branches, mental, laboratory, and educational tests, statistical methods, school health work, and the teaching of the various subjects.

2. *Macmillan Textbook Series.* Macmillan, New York, N.Y. Edited by Paul Monroe.

   Primarily a series of books on the general principles, history, and philosophy of education; volumes on state and county school administration, on social education, on principles of teaching.

3. *Home and School Series.* Macmillan, New York, N.Y. Edited by Paul Monroe.

   A new series of six volumes; three volumes by H. S. Curtis on *Play;* others on general principles of education.

4. *School Efficiency Series.* World Book Co., Yonkers-on-Hudson, N.Y. Edited by Paul H. Harnus.

   A series of thirteen volumes comprising the reports of the New School Inquiry, covering in "survey" form the various fields of school practice; enlarged to include *Portland Survey* and other volumes.

5. *Educational Survey Series.* World Book Co., Yonkers-on-Hudson, N.Y.; Chicago.

   Publication of various school surveys in permanent form.

6. *Riverside Monograph Series.* Houghton Mifflin Co., Boston. Edited by H. Suzzallo.

   An important series of monographs written in non-technical language covering many aspects of education, especially the teaching of various subjects.

II. COMMENT ON CURRENT EDUCATIONAL WRITINGS

1. *A book for rural-school teachers.*—Of the 600,000 teachers employed in all public schools in the United States 215,000 are today teachers in one-room rural schools. These teachers are typically untrained and need keenly, certain teaching tools that can best be found in the form of textbooks and manuals

which relate educational methods to rural-school and rural-community problems. There is definite need at the present time for two types of rural-school literature, one dealing with general rural-community life and its connection with the school, the other dealing with methods of teaching in the rural school. It is probably true that in the present stage of the development of rural-school literature single books, which try to cover the two fields of problems, will be of value to the teacher.

Professor Woofter's *Teaching in Rural Schools*[1] attempts to do this. It is constructed in two parts: the first part covers the questions of organization, instruction, and control, and the second part is devoted specifically to the *teaching* of the elementary-school subjects. A careful reading of the first part raises grave questions as to the wisdom of trying to present in the brief space of one-half of a small textbook the wide scope in which the author is interested. He is forced to include in his rapid perspective of these questions a historical discussion of the development of the rural school, its present function and scope; an enumeration of rural-life needs and types of rural schools; the natural equipment and preparation of the teacher; many problems of organization and management, for example, the school plant, organizing the plant, organizing the work of the school, recreation, relating the work of the school to the community. General principles of teachers are also laid down, periods of growth and development, the child's original capital, his interests and methods of taking advantage of them in education, and a rough psychological discussion of that apperception. General principles of teaching are furthermore applied to the recitation. Various kinds of recitations are catalogued and aims and methods to pursue in each of them are discussed. Part I finally includes a schematic discussion of discipline. Being forced into an encyclopedic discussion of these problems of organization, instruction, and control, the writer has necessarily been able to say little about any one. He has evidently tried to touch briefly upon all of the more important questions which the teacher touches outside of the immediate classroom work. This has resulted in a repetitional style and the author has been forced to drop into the practice of laying down rule-of-thumb principles and methods of procedure rather than of developing carefully each of the principles.

In Part II the subjects of reading and literature, the English language, spelling, penmanship, history and civics, geography, arithmetic, elementary science and agriculture, physiology, hygiene and sanitation, and arts and crafts are discussed with detailed suggestions for methods of teaching each one. Putting this material together in 170 pages the writer again can do no more than rather dogmatically lay out various methods of teaching the individual subjects. In the case of spelling and handwriting he makes brief use of the quantitative work that has been done in the standardizing of these two subjects. He points out, for example, the very good use that can be made of

[1]By T. J. Woofter. Houghton Mifflin Co., 1917. Riverside Textbooks in Education. Pp. xvii+327.

scientific studies in connection with the content of English spelling and in connection with the use of handwriting scales. With no other subject, however, has he made this kind of application. This is a distinct weakness in the presentation. Reading and literature is organized by grades. A great many detailed suggestions are made to the teacher. He quite properly lays an emphasis on silent reading as contrasted with oral reading. He does not, however, take advantage of the established facts of learning in connection with the teaching of reading. The same types of criticism can be made of the presentation of methods of each of the other subjects. In trying to write an elementary book the writer has been forced to quote rather liberally the dicta of so-called standard authorities on the teaching of the different subjects.

The book literature of rural-school administration and teaching is extremely limited. In its present condition Professor Woofter's book will probably be of distinct help to most rural-school teachers.

---

2. *A revision of Judd's "Psychology."—General psychology,*[1] as distinguished from applied psychology, is coming to be held in less esteem than formerly as a preparation for the other courses in education. This does not mean that the psychological principles are not themselves fundamental to education. It means only that the immature student is not capable of applying these principles, unaided, to the practical activity of teaching. The mature student of education, on the other hand, and the educator who would influence the course of development of education must master the fundamental concepts of psychology. To such persons this revision of an important textbook on psychology[2] is of much interest.

The significance of this revision for educators is enhanced by the fact that the author, for most of the ten years which have elapsed since the first edition, has been actively engaged in the teaching and administration of education. This has meant that the functional aspect of mental life, in which it is regarded as active, and doing something in the organism which it inhabits and in the world outside—this aspect which was already emphasized in the first edition is still more clearly defined in the additions which appear in the second edition.

There are in all six chapters which are new or very largely revised. A chapter on the "Classification of Conscious Processes" gives a general survey of the topics which are to be treated and assists the reader in grasping the subject as a whole. The chapter on "Experience and Behavior" defines more clearly than did the chapter on the same topic in the first edition what behavior is and its intimate part in mental processes. It is clearly shown that behavior is not simply a reaction to experience, but that experience itself is made by behavior as much as by impressions from without. The author does not agree

[1] This comment was supplied by Dr. F. N. Freeman, University of Chicago.

[2] *Psychology, General Introduction.* Second completely revised edition. By Charles Hubbard Judd. Boston: Ginn & Co., 1917. Pp. xix+358. $1.80.

with the extreme "behaviorists," however, in identifying behavior solely with overt movements. Internal mental organization is as much behavior as are external movements.

The other new chapters, on "Fundamental Attitudes" (the feeling, emotion, impulse side), on "Voluntary Action and Voluntary Attention," on "Mental Hygiene," and even the chapter on the "Imagination and Formation of Concepts," exemplify the emphasis on behavior and are particularly applicable to education. The student who is sufficiently mature to make applications of general principles for himself will gain profit from a study of the discussions of this book.

---

3. *An intensive study of newsboy service.*—Mrs. Reed's intensive study of *Newsboy Service*[1] is the first objective investigation of vocational and educational guidance of children who are still within the control of the school. It is important because of the large number of schoolboys who secure the first vocational training in the newsboy service and because of the fact that our best opportunity for combining vocation and education is by connecting up with employment in which pupils engage while they are still in school. The monograph gives definite knowledge as to the types of work which are being done by schoolboys and girls in occupations which are peculiarly adapted to juvenile labor. It is presented from the point of view of the scientific study of social and economic problems rather than from that of moral propaganda.

A preliminary investigation involving 986 interviews with newsboys was made during 1914 and 1915. As a result of the knowledge obtained, the final investigation included 1,387 interviews held in March, April, and May, 1916. The conclusions from this type of study have been presented in careful tabular form and will appeal to the person interested in the scientific movement in education. The newsboy problem is discussed under seven aspects: the educational, the social, the economic, the physical, the moral, the vocational, and the avocational. Three groups of schoolboys were studied: the *Daily News* boy, both the carrier and seller, the Curtis newsboy, and the boy in general employment. Mrs. Reed reports in tabular form with very readable discussions (1) the age, grade, and distribution of newsboys, their attendance records, character, qualities, and educational ideals; (2) the social and economic conditions of their homes; (3) a tabular record of the physical and moral conditions of the service; (4) the possibilities of real vocational and avocational training in this service.

---

4. *A new type of city school survey.*—Most of the surveys of the city school systems have been made from the outside by impartial specialists. For this reason, the larger number have been merely inventories of current situations. This was necessarily the case in the early stages of the movement for the scientific evaluation of school practice—of which the "school survey" reveals itself

[1] By Anna Y. Reed. New York: World Book Co., 1917. School Efficiency Monograph Series. Pp. xvi+175. Paper.

as a most important aspect. The *real purpose* of the inventory, however, *should be improvement of school practice.* To secure this in the most complete fashion the local officials must set up "continuing inventories" or "surveys."

This is a sort of thing that former Superintendent H. L. Smith[1] of Bloomington, Indiana, has reported in his *Survey of the Public School System.* In this he gives a detailed record of a *continuing* inventory, taken by himself and by specialists that he called to his aid throughout a period of six years, the larger part of the work being done from 1912 to 1914. In his analysis he included a study of the community and its relation to the school system; of the progress of children through the grades; of the school census, enrolments, failures, withdrawals, repetitions, together with a discussion of the causes; of school finances; and of the course of study. In connection with the latter, he exemplified the way a course of study may be constructed by giving the procedure throughout the building of the history course. This account should be extremely helpful to administrative officers and to teachers. He tested the achievements of pupils in arithmetic, spelling, writing, reading, and drawing. Comparisons were made of children in the various groups. Finally are reported a tabular study of the qualifications, training, and experience of school teachers, and a detailed analysis of the work of administrative officers in supervising instruction.

---

5. *A new book on statistical methods for teachers and administrators.*—One of the Riverside Textbooks in education is *Statistical Methods Applied to Education.*[2] The subtitle of the book, *A Text-book for Students of Education in the Quantitative Study of School Problems*, indicates the field which the book is expected to cover. Many school administrators who have long since forgotten much of their mathematics, and who, in consequence, have been somewhat worried over the introduction of the statistical method of dealing with school problems, will feel a sense of relief when they read, in the author's preface, that "it is possible to explain rather completely the reasons for and the significance of the principal statistical devices without expressing the explanation in technical mathematical language." This book has been written with the deep-rooted conviction that this course is the proper one, and with a complete recognition of the limitations in mathematical equipment of the average school administrator and teacher. One cannot help but feel that the author has undertaken a very necessary and important kind of work when he attempts to show how statistical work in education may be studied and used without specializing in mathematics. As a result of this attempt, Mr. Rugg has produced a book of some four hundred pages, but, as one carefully studies each chapter, he does not find an unnecessary sentence in the entire book.

[1] Teachers College, Columbia University, Contributions to Education No. 82. New York, 1917. Pp. xii+304.

[2] By H. O. Rugg. Boston and Chicago: Houghton Mifflin Co., 1917. Pp. xviii+410. $2.00.

The book is a result of actual classroom work by the author with seven of his graduate classes in education. The men in these classes were all practical school men, including not a few superintendents, and the book, therefore, represents, in part, their reactions to the author's methods of presentation.

The book is divided into ten chapters. It seems to fall naturally into four great divisions: first, introductory, in which Mr. Rugg sets forth the uses which may be made of statistical methods in education, indicates the best way of quoting educational facts and some of the pitfalls which should be avoided, and shows how to tabulate with accuracy and dispatch the educational data which have been gathered. Secondly, he deals with the method of computing averages. He discusses thoroughly, and in a very clear manner, the distinction between the statistics of variables and of attributes; how to throw the data into frequency distributions, and the plotting of the frequency curve. Under the heading of "Averages" he discusses the mode, median, and arithmetic mean. These three methods of averages, the author feels, are all that the most of the school men will ever need, but he includes also a discussion of the harmonic mean and the geometric mean. One of the most valuable parts of the chapter on "Averages," and which is indicative of the desire of the author to be of real service to his reader, is the discussion of the use of "the different measures of central tendency." One not only wants to know how to do a certain thing, but he desires to know how to use it after he has done it. Thirdly, the book deals with the measures of variability, the use of normal frequency curve in education, and the measurement of relationship. Here are discussed the four measures of variability; the range, the quartile deviation, the standard deviation, and the mean deviation. Chapter vii is a discussion of the frequency curve. It is one of the few chapters with which those who are not mathematically inclined will have any difficulty. The discussion of permutations and combinations might be criticized upon the ground that it is too technical, unless one considers that the text is not only for school administrators, but also for specialists in research work. For the use of the latter, such a chapter is absolutely essential.

The discussion of the "measurement of relationship," in chapter ix, which includes methods in the computation of the correlation, regression coefficients, and probable error, may also present difficulties to the average school man, but one cannot very well see how the discussion could be clarified nor how it could be left out of a book on statistical methods.

The fourth division is chapter x, and is, in many respects, the best presentation of the "use of tabular and graphic methods in reporting school facts" which has yet been published. One cannot help but feel that in this chapter the author has succeeded to a remarkable degree in answering that vexing question, "How is one to *use* his knowledge of statistical methods?" There are many graphic methods presented for reporting school facts which should prove to be invaluable to a progressive school administrator. Plate No. I, entitled "A Tabular Survey of the Published Quantitative Studies on

School Administration," is a successful graphic device for putting the reader in immediate touch with the literature of the different phases of school administration. Five in all are studied, such as standardization of the course of study, the teaching staff, school machinery and the pupil, school finance and business management, school organization and administration. The use of the plate is fully explained in the text.

The bibliography is remarkably well chosen and annotated and covers a wide range of studies on school administration. The appendix is divided into three parts: Appendix A, being a selective bibliography of statistical methods, which is probably the most practicable which has yet been published; Appendix B is an explanation of the formulae and symbols used in the text; Appendix C includes ten tables for facilitating computation. The author has used eighty diagrams and sixty-eight tables to illustrate the various processes he describes. These diagrams and tables are well chosen.

One cannot help but feel that the text will appeal to practical school administrators for use in determining many important school facts about their own systems, will aid in interpreting reports on other school systems, and will give meaning to their professional reading. In these days, when educational books and magazines fairly bristle with such terms as "frequency curve," "probable error," "median," "coefficient of correlation," etc., the school man who does not understand what these terms mean soon finds himself very much at sea.

This book should also prove invaluable to the heads of departments of research. These departments are being created very rapidly in our large school systems, and the heads of these departments will find that this book will be to them what a classical dictionary is to a teacher of Latin.

The third group who will use this book with profit are students in our departments of education. Every up-to-date department of education is requiring some work in statistical methods, and as yet there has been no textbook which has fully met this need. The book is so planned and written that it will be useful, not only as a reference book, but also as a textbook. At the close of each chapter are illustrative problems which may be worked by the students. These are adapted from the author's *Illustrative Problems in Educational Statistics*, which has been published to accompany this text.

Mr. Rugg's book is a real contribution to the science of education, and one ventures to prophesy that it will be found on the desk of every progressive school man in the country.

PAUL C. STETSON

PRINCIPAL, SOUTH HIGH SCHOOL
GRAND RAPIDS, MICHIGAN

III. DESCRIPTIVE STATEMENTS OF CERTAIN EDUCATIONAL PUBLICATIONS

1. *The Observation of Teaching.* By C. R. Maxwell. Riverside Educational Monographs. Houghton Mifflin Co., 1917. Pp. xi+120.

A small manual aimed to systematize the observation of teaching by supervisors and to be a direct aid to the conscious appreciation of good and poor teaching. A discursive treatment showing the strengths and weaknesses of various systems of observation; discusses analytically the purposes of observation, also the value of observation; catalogues the qualities of a good teacher; presents outline aids to observation in each chapter. The outline in the chapter on "The Teacher" lists the personal characteristics, elements of teaching ability, social efficiency, and professional attitudes that go to make up the successful teacher. The detailed outline on "The Pupils" points out the importance of grading of pupils as to types, responses, attitudes, and so on. The "Lesson Procedure" is outlined in the same fashion—types of lessons, aims, methods of approach, presentation, and assignment. Successive chapters list points for observation on the development lesson, the drill lesson, the review lesson, the lesson for appreciation, questioning, class management, and the schoolroom. This book will be of most service to the prospective teachers in our normal schools and schools of education. It will be helpful to the supervisor in that it analyzes the qualities of teaching and the important aspects of school procedure that ought to be uppermost in the mind of the supervisor in his observation work.

2. *Negro Education.* Thos. J. Jones, Editor. Bulletins Nos. 38 and 39, United States Bureau of Education.

Each is devoted to a study of the private and higher schools for the colored people of the United States. Vol. I (400 pages), various phases of negro education. Twelve chapters dealing first with actual conditions, followed by plans for improvement. Numerous maps, tables, and charts. Appendix of 100 pages, devoted entirely to statistics of negro schools.

Vol. II (700 pages), brief chapter on "Method and Scope of Work"; one on "Summary of Educational Facilities"; nineteen chapters dealing with the conditions relating to education, both public and private, of nineteen southern states. Facts obtained through personal visits to institutions described, from reports to state superintendent, and from United States census.

3. *Suggestions of Modern Science Concerning Education.* By Jennings, Watson, Meyer, and Thomas. New York: Macmillan, 1917. Pp. 211.

Four essays which discuss education from the psycho-biological point of view.—Essay 1. "Biology of Children in Relation to Education." Maintains that the artificial life imposed by school conditions is needless. Destructively critical of present-day educational theory and practice.—Essay 2. "Practical and Theoretical Problems in Instinct and Habit." Point of view is that of behavioristic psychology. Presents methods and data for four important conclusions arrived at in the Johns Hopkins laboratory.—Essay 3. "Mental and Moral Health in a Constructive School Program." Contains a variety of suggestions made on problems of a psycho-biological nature met with in the lives of school children. Contains a "Life Chart" with directions for use and construction.—Essay 4. "Persistence of Primary Group Norms in

Present Day Society and Their Influence in Our Education." Points to failure of "common-sense" methods and urges a systematic study of human behavior as a basis.

4. The *Annual Report* of the Rockefeller Foundation (1916, 450 pages).

Annual expenditures over $6,000,000. Topics discussed: "Health Improvement," "War Relief," "Industrial Investigations," and "Scientific Studies of Governmental Problems." Health work directed chiefly toward the relief and control of the hookworm disease. Contains many valuable graphs, tables, and photographs.

IV. EDUCATIONAL PUBLICATIONS RECEIVED DURING OCTOBER

A. PUBLICATIONS OF UNITED STATES BUREAU OF EDUCATION

1917, No. 0. DEFFENBAUGH, W. S. *Current Practices in City School Administration.* Washington. Paper. Pp. 98.

1917, No. 2. HOSIC, JAMES FLEMING. *Reorganization of English in Secondary Schools.* Washington. Pp. 181.

1917, No. 00. JESIEN, W. S. *Military Training.* Washington. Paper. Pp. 35.

1917, Nos. 38 and 39. JONES, THOMAS JESSE. *Negro Education. A Study of the Private and Higher Schools for Colored People in the United States.* Vol. I, No. 38; Vol. II, No. 39. Washington. Pp. xiv+423 and v+724.

1917, No. 00. LYFORD, CARRIE ALBERTA. *Three Short Courses in Home Making.* Washington. Pp. 104.

1917, No. 00. NORTON, HELEN RICH. *Department-Store Education.* Washington. Pp. 79.

Opportunities for History Teachers. National Board for Historical Service. Washington: Department of the Interior, Bureau of Education. Teacher's Leaflet, No. 1, 1917. Paper. Pp. 22.
The lessons of the great war in the classroom.

1917, No. 00. PERRY, CLARENCE ARTHUR. *School Extension Statistics.* Washington. Paper. Pp. 30.

1917, No. 36. SMITH, ANNA T. *Demand for Vocational Education in the Countries at War.* Washington. Paper. Pp. 16.

1917, No. 11. SMITH, ANNA T., and JESIEN, W. S. *Higher Technical Education in Foreign Countries.* Washington: Department of Interior, Bureau of Education. Bulletin, 1917, No. 11. Paper. Pp. 121.

1917, No. 00. SWIGGETT, GLEN LEVIN. *The Conference on Training for Foreign Service.* Washington. Pp. 67.

UNITED STATES FOOD ADMINISTRATION. *Ten Lessons on Food Conservation.* Washington. August 1, 1917. Paper. Pp. 64.

B. TEXT-BOOKS FOR THE ELEMENTARY GRADES

PELLETT, FRANK C. *Our Backdoor Neighbors.* New York: Abingdon Press, 1917. Photographies from life by the author. Pp. 209.

Intimate stories from out of doors designed to convey knowledge of wild creatures and to develop a more sympathetic relationship with them.

PERKINS, LUCY FITCH. *The Dutch Twins Primer.* Boston: Houghton Mifflin Co., 1917. Pp. 95. $0.50.

SETON, ERNEST THOMPSON. *Wild Animal Ways.* Boston: Houghton Mifflin Co., 1916. Illustrated. Pp. viii+140. $0.60.

SINDELAR, JOSEPH C. *Nixie Bunny in Faraway-Lands.* Chicago: Beckley-Cardy Co., 1917. Illustrated. Pp. 160. $0.45.

Life in other lands told for girls and boys by the Cottontails. Suitable for second and third school years.

SMITH, SCHUCKAI, and Others. *New Common-School Song Book.* Chicago: Beckley-Cardy Co., 1917. Pp. 174. $0.40.

TAPPAN, EVA MARCH. *The Little Book of the Flag.* Boston: Houghton Mifflin Co., 1917. Pp. v+122. $0.40.

THOMSON, JOHN STUART. *Fil and Filippa.* New York: Macmillan, 1917. Illustrated. Pp. viii+75. $0.40.

Life in the Philippine Islands delightfully told for girls and boys.

WASHINGTON, BOOKER T. *Up from Slavery.* Boston: Houghton Mifflin Co., 1901. Pp. ix+330. $0.60.

C. TEXTBOOKS FOR THE HIGH SCHOOL

BLAISDELL, J. G. *Exercise and Review Book in Biology.* Yonkers-on-Hudson: World Book Co., 1917. Paper. Pp. viii+152. $0.80.

A combined laboratory guide notebook and review book for students' use. Contains more than one hundred laboratory exercises, necessary illustrations, full directions to the pupil, space for his notes and drawings, etc.

BRESLICH, ERNST R. *Third-Year Mathematics for Secondary Schools.* Without tables. Chicago: University of Chicago Press, 1917. Pp. xviii+369. $1.00.

———. *Logarithmic and Trigonometric Tables and Mathematical Formulas.* Chicago: University of Chicago Press, 1917. Pp. xvii+118. $0.75.

BROOKE, TUCKER. *The Yale Shakespeare. Much Ado about Nothing.* New Haven: Yale University Press, 1917. Pp. 138. $0.50.

CAMPBELL, KILLIS (Editor). *The Poems of Edgar Allan Poe.* Boston: Ginn & Co., 1917. Pp. lxvi+332. $1.50.

An introduction contains the main facts of the poet's life, his guiding principles, his indebtedness to other poets, and a review of criticisms. The volume closes with copious notes and appendixes.

CAMPBELL, OSCAR JAMES, and RICE, RICHARD ASHLEY. *A Book of Narratives.* Boston: D. C. Heath & Co., 1917. Pp. vi+497.

D'OOGE, BENJAMIN L., and EASTMAN, FREDERICK C. *Caesar in Gaul.* Boston: Ginn & Co. Illustrated. 12mo, pp. xl+120. $1.40.

Commences with a biography of Caesar in simple Latin, thus adequately reviewing the work of the first year. Then follow the first four books of the *Gallic War.* Interspersed throughout are reliable maps and battle plans, attractive illustrations, notes, and explanatory helps.

EMERSON, EPHRAIM. *The Beginnings of Modern Europe (1250–1450).* Boston: Ginn & Co., 1917. Maps. 12mo, pp. xiii+550.

FUENTES, VENTURA, and FRANÇOIS, VICTOR E. *A Trip to Latin America.* New York: Henry Holt & Co., 1917. Pp. x+196.

Industries, short biographies, great deeds in simple Spanish with exercises, notes, etc., for the English student.

HOLBROOK, RICHARD T. *Living French.* Boston: Ginn & Co., 1917. Pp. xvii+480.

A new course in reading, writing, and speaking the French language.

HOLMES, HENRY W., and GALLAGHER, OSCAR C. *Composition and Rhetoric.* New York: D. Appleton & Co., 1917. Pp. xi+353.

From the point of view that while few high-school pupils will ultimately become authors, all must write and speak English in the work of every day.

PATTEE, A. F. *Practical Dietetics.* Mount Vernon, N.Y.: A. F. Pattee, publisher. 11th ed., revised and enlarged. Pp. 502. $1.75.

PAYNE, L. W. *American Literary Readings.* Chicago: Rand McNally & Co., 1917. Pp. xviii+647. $1.40.

Selections from the best writings of twenty-three American masters of literature.

———. *Learn to Spell.* A high-school and college book. Chicago: Rand McNally & Co., 1916. Pp. 144. $0.40.

POTTINGER, DAVID T. (Editor). *English Essays.* New York: Macmillan, 1917. Pp. xxi+331. $0.25.

Bacon, Addison, Goldsmith, Stevenson, Emerson, and others.

RICHARDS, E. H. *The Cost of Food.* New York: John Wiley & Sons. 3d ed., 1917. Pp. 141.

ROBESON, F. E. *Précis Writing—A Progressive Course of,* pp. 145; *Historical Passages for,* pp. 118. New York: Oxford University Press—American Branch, 1917.

SKINNER, ERNEST BROWN. *College Algebra.* New York: Macmillan, 1917. Pp. 263.

The Yale Shakespeare. *Romeo and Juliet.* Edited by WILLARD H. DURHAM. New Haven: Yale University Press, 1917. Pp. 144. $0.50.

TANNER, W. M. *Essays and Essay Writing.* Boston: Atlantic Monthly, 1917. Pp. xxv+307. $0.85.